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JAMAICA AGRICULTURAL SECTOR ASSESSMENT

RURAL POOR PROFILE,  
CONSTRAINT ANALYSIS  
& AID STRATEGY

October 1976

## OUTLINE

### JAMAICA AGRICULTURAL SECTOR ASSESSMENT

#### RURAL POOR PROFILE, CONSTRAINT ANALYSIS & AID STRATEGY

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## TARGET GROUP PROFILE

In compliance with a congressional mandate the use of AID funds for development projects must be directed toward assisting the "poor majority." The following attempts to further describe and define the target groups of rural poor who may be eligible recipients of the benefits of development projects in which AID funds may be utilized through either loans/ or grants.

### Constraint Analysis and Aid Strategy

#### 1. Profile of the Target Group

##### A. General Economic Indicators

###### 1. Land in Farms

During the period 1954 - 1968 there was a continuous decline in the area of land in farms. /1 Of a total land area of 2,715,829 acres 1,914,375 were included in farm lands in 1954 decreasing to 1,489,188 in 1968.

###### 2. Utilization of Land /2

A brief review of the data obtained from the 1968-69 Census will assist the reader to visualize some of the characteristics of Jamaica Farming Operations.

357,412 acres or 24% of the total acreage in farms were crops in pure stand. Grassland occupied 321,459 acres or 21.59%. 200,478 acres or 13.46% were mixed stand (all herbaceous crops or tree crops interplanted or mixed) and 23,490 acres or 1.58% in food forest (consisting of a canopy of tall economic trees including breadfruit, star-apples, mango, avocado pear, etc. in association with or without a lower canopy of cocoa, coffee, citrus and other small trees and shrubs, and sometimes a third layer of herbaceous crops in spaces where light permits such as Kale or Calaloo. Scattered tree crops were not included in the area of food forest. Thus 60.63% of the land in farms was in active use while of the remaining 39.37% 221,613 acres or 14.88% were in Ruinate (land which once had been cultivated but on census day was covered in weeds and shrubs with probably a few low trees but not dense woodland. Extremely rocky land or steep land of no agricultural value was not included), 200,652 acres or 13.47% in woodland 34,377 acres or 2.31% in fallow, and 129,709 acres or 8.71% in other types of land. It should be noted, however, that somewhat less than half of the acreage making up the 14.88% in Ruinate was used for pasture.

The relative importance of the different classes of land utilization by land authorities is shown in Appendix 1 - 1, 1-2, and 1-3. /3

/1 Table i, page 9, Census of Agriculture 1968-69, Jamaica Vol.1 Part A.

/2 Census of Agriculture 1968-69, Jamaica Vol. I Part B page 14.

/3 Ibid Table 3.

3. Extent of Crops in Pure Stand

The main crops identified in pure stand were sugar cane, 157,386 acres; citrus, 18,188 acres; yams, 25,851 acres, bananas, 41,447 acres; irish potato, 1,920 acres; coconut 39,291; cocoa 7,419 acres; coffee, 7,003; and other crops 58,907. Distribution by land authority and by size of farm are shown in Appendix tables 1-4 to 1-13. /4

4. Livestock and Poultry

Census enumerators reported an unwillingness on the part of respondents to supply data for this class of property as the request was associated with collection of data for income tax purposes. Comparison with independent estimates from other sources indicate under estimation may be as much as 30%.

The Census reported 278,710 cattle, of which 34,898 were dairy cattle, 183,654, beef cattle and 60,158 dual and draft purpose cattle; 40,686 farm animals, of which 37,083 were mules and donkeys and 3,603 were horses; 24,869 breeding sows, 182,024 other pigs, 6,214 sheep, 208,106 goats, 24,383 other animals (rabbits, guinea pigs, etc.); and 4,004,564 poultry of which 3,727,168 were chickens and 277,416 other poultry. Distribution by land authority and by farms of less than 5 acres are shown in Appendix 1-14 to 1-17. /5

5. Number of Farms

The total number of farms has remained fairly constant since 1954 with a gradual increase in the number of farms of less than 5 acres and a corresponding decrease in the number of farms over 5 acres. /6 78.45% of all farms; which includes 4,768 landless farms were less than 5 acres in size. The remaining 21.55% farms include 25,237 of 5 acres to less than 10 acres, 12,370 of 10 acres to under 25 acres, 2,280 of 25 to under 50 acres, 775 of 50 to under 100 acres, 379 of 100 to under 200 acres, 320 of 200 to under 300 acres and 293 of over 500 acres.

6. Productivity

Contribution of Agriculture and Forestry to Gross Domestic Product.

Even though gross domestic product per farm increased gradually for the period 1954 to 1968 the percentage contribution of Agriculture and forestry to total G.D.P. (at constant 1960 prices) declined at a marked rate from 14.4% in 1954 to 9.1% in 1968. See appendix 1-18. /7 Percentage participation of agriculture and forestry in the gross domestic product continued to decline until 1970 when it reached a low of 6.7%. /8 For the years 1971-75 percentage participation of Agriculture and Forestry was 7.8, 7.6, 7.5, 7.1, and 7.7%. /8

/4 Ibid Tables 13-22.

/5 Ibid Tables 23-64.

/6 Census of Agriculture 1968-69, Jamaica, Vol. I Part A.

/7 Ibid Table iii page 11.

/8 Economic and Social Survey, Jamaica 1975, page 353.

G.D.P. Per Farm*	1968	1961	1958	1954
	\$ 287	\$ 258	\$ 227	\$ 214**

\* Source: Census of Agriculture 1968-69 Jamaica Vol. Part A.

Further indication of low labor productivity in agriculture is evidenced in the following tables which relates total G.D.P. per employed worker at factor cost (constant 1960 prices to G.D.P. per person employed in agriculture). /9

	G.D.P. at Factor Cost (constant prices 1960)			
	Per Worker			
	1960	1968	1969	1971
Real GDP per employed worker total economy	\$ 762.2	1,030.6	1,051.1	1,147.5
Real GDP per employed worker in agriculture	226.6	279.6	243.9	337.1
* % Calculated from above	29.73%	27.13%	23.20%	29.39%

#### 7. Income Distribution

Income from Agriculture and Forestry has been far below the average income from other productive sectors of the economy. To illustrate the seriousness of the disparity, National income figures were divided by the number of workers employed to obtain the average income per worker as follows: /10

	1960	1968	1969	1972
National Income Per Employed Worker (Total Economy)	\$648.6	\$1,224.8	\$1,284.8	\$1,692.6
National Income Per Worker Employed in Agriculture	\$216.1	\$ 353.8	\$ 321.7	\$ 493.0

Income distribution is also recognized by the government as an important economic and social issue. Rough estimates based on labor income rather than household income suggest that income distribution became more highly skewed between 1968 and 1974. In this period, the top 5% of the labor force increased its share of total labor income from 25% to 40% while the bottom 60% found its share reduced from 25% to 16%, as indicated in the following table:

/9 Green Paper on Agricultural Development Strategy page 15.

/10 Ibid page 15.

\*\*Note - Prices in this report are quoted in Jamaican dollars. One U.S. dollar equals J\$.9025.

Income Distribution /11

% Household	<u>Cumulative Income Shares %</u>			
	1958	1968/ <sup>1</sup>	1972/ <sup>1</sup>	1974/ <sup>1</sup>
0- 60	19.0	25.0	20.0	16.0
0- 80	38.5	47.2	39.3	32.0
0- 90	56.5	63.0	57.0	48.3
0- 95	69.8	75.0	65.0	60.0
0-100	100.00	100.0	100.0	100.0
Gini Coefficient	.61/ <sup>2</sup>	.53	.60	.67

<sup>1</sup> Data relate to labor force.

<sup>2</sup> Gini Coefficient for 1958 was recomputed by IBRD.

The trend in income distribution in recent years indicate that a disproportionate part of the benefits of economic growth of the country achieved in the 1970-1974 period (5.6% average annual) has accrued to the higher income classes with little or no improvement for those in lower income classes.

The Government of Jamaica has initiated a series of measures destined to alleviate and revise the trend described above. Among the more important measures taken are -

- (1) the freezing of salaries at top levels,
- (2) establishment of higher minimum wage laws (\$20 per week),
- (3) Government wage supplements to employers and Government initiatives to structure projects in the Agricultural Sector with high labor components.

8. Employment Patterns

Labor surveys of 1975 show remarkable growth in the size of the labor force, (all persons 14 years of age and over not attending school full time who during the survey week worked for 1 hour or more, did no work but had a job, had no job but were actively seeking work and had no job, did not actively seek work, but wanted a job and were available), when compared with 1974. The increase resulted

<sup>11</sup> The Labor Force 1974, Jamaica Department of Statistics.

In a total labor force which numbered 848,500 for the April survey and continued to increase to 869,400 by the time of the October survey. The average of 858,950 exceeds the previous years average by 41,700 or 5.1 per cent, a rate of increase which is unprecedented in recent years, comparing with 1.4 per cent for 1974 and 1.3% for 1973. The Male and female labor force grew by about the same amount. <sup>/12</sup>

Employment and Unemployment by Sex <sup>/12</sup>  
1974-1975

		1974		1975	
		April	October	April	October
Total Employment	No.	642,000	648,000	676,600	685,100
	Rate	78.2%	79.6%	79.7%	78.8%
Male	No.	399,600	393,200	421,500	412,700
	Rate	88%	87.5%	88.7%	87.9%
Female	No.	242,400	254,800	255,100	272,400
	Rate	66.2%	69.7%	68.3%	68.1%
<hr/>					
Total Unemployment	No.	178,000	166,500	171,900	184,300
	Rate	21.8%	20.4%	20.3%	21.2%
Male	No.	54,500	56,000	53,500	56,600
	Rate	12.0%	12.5%	11.3%	12.1%
Female	No.	123,500	110,500	118,400	127,700
	Rate	33.8%	30,3%	31.7%	31.9%

In recent years the percentage share of the labor force dedicated to agricultural and forestry pursuits has shown a rather large decline. Agriculture and forestry accounted for 39% of the labor force in 1960, 36% in 1968, 35% in 1969 and 28% or 224,700 persons in 1972. <sup>/13</sup> Causes for this decline have been attributed to:

1. The seasonality of agricultural employment.

<sup>/12</sup> Economic and Social Survey, Jamaica, 1975, National Planning Agency.  
<sup>/13</sup> Green Paper on Agricultural Development Strategy Pages 7 and 8.

2. The stigma which traditionally is attached to agricultural labor from the days of slavery.
  3. Rising labor prices in other sectors of the economy, particularly the bauxite industry.
  4. Low revenue productivity of labor in agriculture.
9. Rural Unemployment/Under-employment

While not strictly a rural urban distinction, the classification used by the National Statistics Department for its semi-annual surveys for industry group, "Agriculture, Forestry and Fishing" is typical of the rural labor situation.

The employment situation for the years 1973-1975 <sup>/14</sup> is summarized by industry group in appendix 1-19 and 1-20.

Underemployment is not reflected in the above figures.

A review of National employment figures by number of months worked indicates that unemployment for both sexes may be understated by as much as 5%. (Calculated from October 1975 Survey Page 51, The Labor Force 1975.)

B. Social Welfare and Demographic Indicators

1. Population Growth Distribution and Migration Patterns

a. In summarizing population growth in Jamaica since the earliest settlement of the island, two broad periods should be considered, the first covering slavery and the second covering the post emancipation period.

(1) Population Growth During Slavery

Available evidence is that the indigenous population was not large at the time of the Spanish conquest and settlement by the Spaniards was not large.

Their early disappearance following the European conquest may be due as much to their inability to withstand the new diseases brought to the island by the Europeans as to the policy of extermination which historians have ascribed to Spanish settlers.

Early settlers could therefore not depend on the indigenous population as a source of labor and soon resort to the slave trade became the accepted policy.

/14 The Labour Force 1975, Department of Statistics, Jamaica - Page 94.

After conquest by the English the trade was greatly expanded, so that by 1778 it has been estimated that the net importation of slaves had reached 59,951. By 1787 the slave population had reached 210,894. Low fertility and high mortality, still resulted in a natural decrease in population and resort to the slave trade was necessary to maintain and increase population.

Efforts to recruit white settlers resulted in some increases to the white population, but their increase was much slower than that experienced by the slave population. By 1789 the white population had only reached 25,000.

In the early years of the slave trade an anti-natalist policy or one indifferent to the level of mortality or conditions of mating prevailed for the slave population. With regard to fertility, pregnancy meant that the females were prevented from performing many of the duties expected of them.

Towards the end of the 18th century, however, a series of developments combined to cause a shift in the policy of the plantation owners. These were partly economic due to increased demand for slaves in other areas of the world and partly due to the rise of humanitarian movements in England which produced strong opposition to the slave trade. Further, slave uprisings in Haiti caused some apprehension amongst planters, lest further accumulation of slaves on their own plantations might lead to similar disturbances. These developments led to a reassessment of the role of the slave trade in the recruitment of the plantation labor force.

The advantages of a policy of stimulating reproduction became clear and measures were taken to increase reproduction including exemption from hard labor for women who gave birth to as many as six children.

Slave registration data indicate that the measures taken were not sufficiently effective to maintain population numbers following the cessation of the slave trade in 1807.

Slave Population Movements in Jamaica  
During Slave Registration

<u>Year of Registration</u>	<u>Slave Population</u>	<u>Increase due to Births</u>	<u>Decrease due to</u>	
			<u>Deaths</u>	<u>Manumission</u>
1817	346,150		-	-
1820	342,382	24,346	25,104	1,016
1823	336,253	23,249	26,351	921
1826	331,119	23,026	25,170	957
1829	322,421	21,728	25,137	1,117

These figures probably understate both births and mortality but are sufficiently accurate to show the continuous excess of deaths over births.

(2) Growth in the Post Emancipation Period

Population Movements for the post emancipation period are summarized in appendix 1-21. /15

Natural increase in population increased steadily from 8 per 1,000 in 1861 to 30.9 per 1,000 in 1970. The death rate was lowered from 32 per 1,000 to 8.2 per thousand during the same period while the birth rate remained fairly constant.

The first broad period of historical growth can be put as extending from 1844 to 1881. Birth rates for the intercensal intervals of this period were 40, 39 and 38 per thousand respectively. External Migration and the Cholera epidemic of 1851 were important components limiting population growth for this period. The three intercensal periods all show net immigrations of both East Indians and liberated Africans. Fairly high rates of natural increase are noted after 1851 when intercensal rates of 1.2% are recorded.

The next broad interval, extending from 1881 to 1921 witnessed a change in the net emigration balance showing a pronounced outflow. This contributed greatly to reduction in the rates of population growth which declined from 1.4% during 1861-1881 to just under 1 per cent in 1881-91 and then to 0.32% in 1911-21, the lowest rate of growth

ever experienced by the island. Factors affecting the outflow included response to demand for labor on the Panama Canal, development of the banana industry in Costa Rica and easier access to the United States resulting from development of the banana trade between Jamaica and the North American market. Between 1911 and 1921 net emigration was running at about 8,000 per year, equivalent to 74% of the natural increase of the island. A succession of hurricanes between 1911 and 1921 and a high level of mortality experienced from influenza in 1918 further restricted population growth during this period.

The year 1921 signaled two important changes in the demographic history of Jamaica. One, the end of an era of unrestricted emigration to the United States and Latin America, and second, the emergence of an era of mortality control. The Public Health Act of 1926 conferring appropriate authority on the Central Board of Health and a program of the Rockefeller Foundation to educate the population in the control of a variety of infectious diseases were major factors in the reduction of mortality. As a consequence of the reduction in mortality and restricted emigration population growth was greatly increased. Between 1921 and 1943 the population first passed the 1,000,000 mark moving up from 858,000 to 1,237,000, resulting in an annual rate of growth of 1.7%, the highest experienced by the island since 1844.

In what may be termed the modern phase, that is the period following World War II, external migration again became an important factor in restricting population growth. Three avenues of emigration were (1) the United Kingdom (2) the United States and (3) Canada. Emigration to Canada, in contrast to the movements to the United Kingdom and the United States was highly selective and consisted for the most part of skilled and professional personnel. These movements combined to produce a net loss to the island of 195,000 in the intercensal period 1943-60, equivalent to one-third of the total natural increase during the period so that even with a natural increase which reached 2.3% for the period, the actual growth experienced during the period was held to 1.5%. During the decade 1960-1970 the annual volume of outflow of 28,000 excluded losses due to mortality and was equivalent to 53% of the total natural increase in the decade. Despite the high level of fertility in this period, with a birth rate of 40 and a death rate of 8 per /000, a rate

of natural increase which for the first time exceeded 3%, the annual rate of increase experienced by the island was still only 1.5%. Total population passed the 2,000,000 mark in 1974.

Population distribution and migration for the period 1960-1970 are summarized in appendix 1-22, 1-23 and 1-24. /16 St. Andrew, St. Catherine and St. James being the only parishes which showed net gains through internal migration. All other parishes showed net external migration for the period. The numbers moving approximate 101,000 males and 136,000 females or approximately 23,000 persons annually.

General directions of the internal flow are indicated by the following diagram - page 11 and nationwide distribution of the population is shown in the map which follows (page 12). /17

2. Health and Nutrition /18

Mortality statistics contrive to show considerable improvement in the health situation. The death rate fell from 7.2 in 1974 to 6.9 in 1975. There was an even greater fall in the infant mortality rate which moved down from 31.4 in 1973 to 25.9 in 1974, and to 24.8 in 1975 as shown in the following table:

	Mortality Rates: 1970 to 1975					
	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975*</u>
Death rate per '000 population	7.7	7.4	7.1	7.2	7.2	6.9
Infant Mortality per '000 live births	32.5	27.9	30.9	31.4	25.9	24.8
Still births	529	744	675	616	622	622

\*Estimates

During 1975 the Government Health Service had available a complement of 7,515 beds in General and Special Hospitals. Of these 2,979 were located in the Bellevue Hospital for mental disorders.

The capacity of the health sector as reflected in the number of persons practicing in the field of health has expanded

/16 Recent Population Movements in Jamaica.

/17 Ibid. page 53.

/18 Economic and Social Survey, Jamaica 1975.

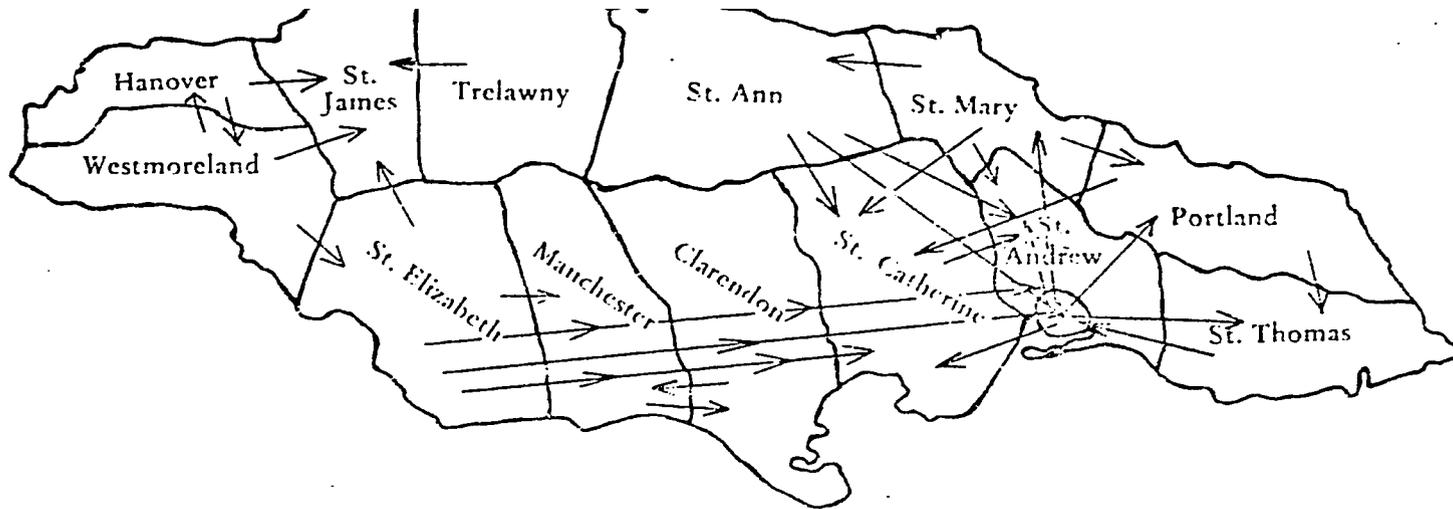
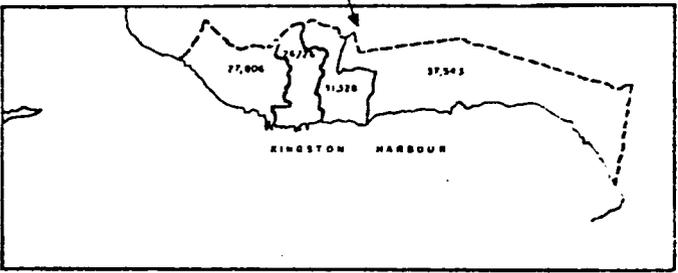
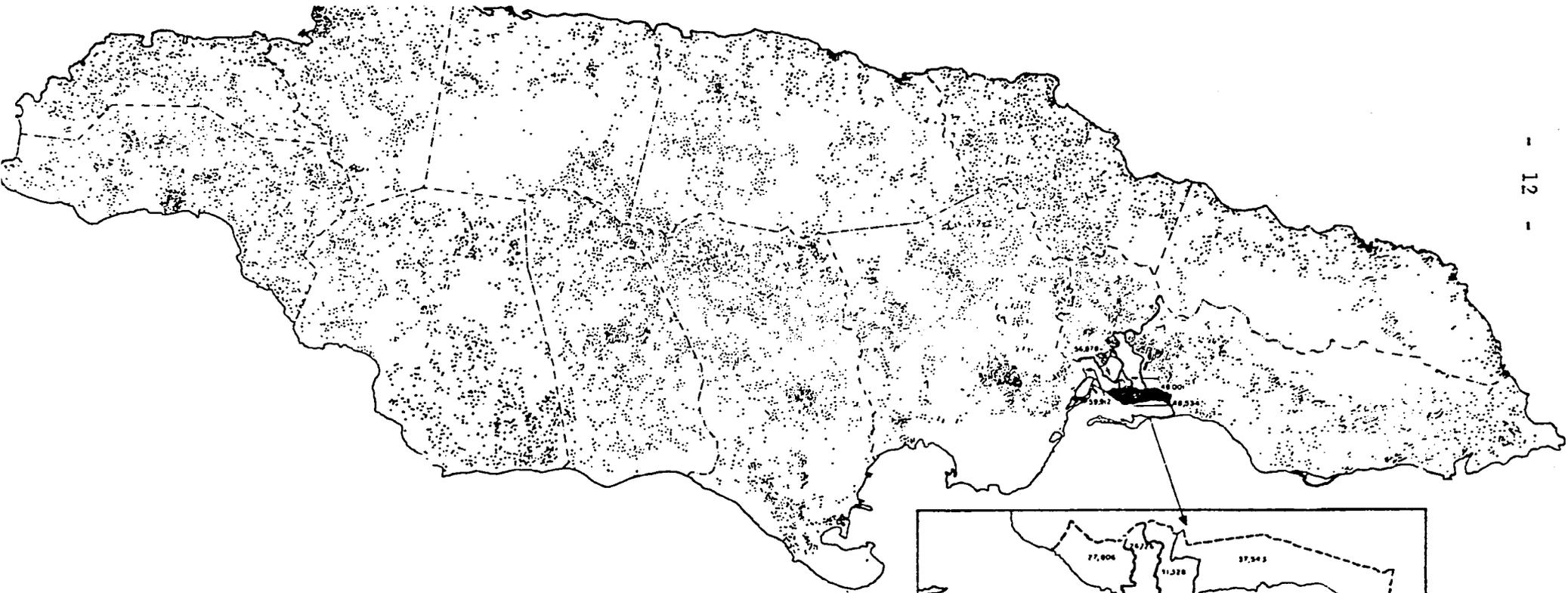
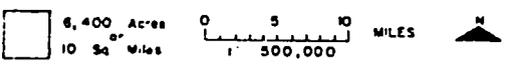


Figure 3.8 – Directions of internal migration streams, 1960-70

# POPULATION DISTRIBUTION



EACH DOT REPRESENTS 100 PEOPLE (1960 CENSUS)



6,400 Acres  
10 Sq Miles

between 1973 and 1975 as indicated in appendix 1-25. /19

Dental service statistics for the years 1974-1975 are shown in appendix 1-26.

These data indicate that in order to meet the ideal ratios of health personnel to population recommended by P.A.H.O. Jamaica needs four times the present complement of doctors and seven times the number of dentists now practising. Although the ratio of nurses to population compares favorably with the recommended ratio the shortage of assistant nurses reduces the beneficial effects of this.

Public Health programs include the mosquito control project, inoculation against such diseases as smallpox, typhoid, Poliomyelitis, tuberculosis, tetanus, and yellow fever. The Public Health Service is also responsible for recording notifiable diseases throughout the island and for taking remedial actions where necessary. Other important health services rendered by public health affairs include inspections of places where commercial food handlers operate, barber shops, hotels, schools and private dwellings in the interest of maintaining proper standards of sanitation.

During each of the years 1973-75 the government has budgeted over 1.6 million dollars for health services amounting to 8.78%, 7.84% and 7.43% respectively of the national budget.

#### Nutrition

A "Food and Nutrition Policy for Jamaica with Programmes for Incorporation into the National Development Plan 1975/76 - 1977/78" was prepared for the Nutrition Advisory Council in June 1974 and revised in January 1975.

The study identified certain operationally significant groups from the 1973 Statistical surveys as follows:

<u>Children</u>	<u>Number</u>	<u>Percent</u>
0- 5 years	303,000	15
6-15 years	599,000	30
<u>Adults</u>		
Pregnant and Lactating Mothers	63,000	3
Heavy Laborers	250,000	13
Unemployed	176,000	9
Persons over 70 years of age	61,000	3
Paupers and Indigents	16,000	1
Other Adults	535,000	26
Total 1973 Estimates	2,003,000	100

The Nutritional status of Jamaica was summarized as follows:

- "(1) About one-fifth (approximately 50,000) of children under 4 years of age are significantly underweight for their age. These children are consequently disadvantaged before they start school.
- (2) About 3% of children in the second year of life are so severely undernourished as to require urgent treatment. Such treatment is only salvaging children who may have already suffered irreversible mental and physical retardation. The cost of hospitalization of these cases has been estimated at \$3,000,000 per year.
- (3) Mortality among 1-4 year old children is 4.5 per 1,000 which is twice that of Barbados, Puerto Rico, Trinidad and Tobago and is mainly caused by malnutrition. This constitutes a waste which is largely preventable.
- (4) About 45% of pregnant and lactating mothers are anaemic, resulting in complications for both mother and infant at childbirth and afterwards.
- (5) Many children are going to school without adequate breakfast and are thus unable to concentrate and learn to their full potential.

- (6) Weights and heights of school children of low income families are significantly lower than those of children from middle and upper income families. This condition is primarily due to inadequate diets.
- (7) About 30% of pre-school and an undetermined number of school children do not receive sufficient food energy and protein. It is thus impossible for them to reach their full potential both physically and mentally.
- (8) Agricultural workers during periods of heavy labor lose weight indicating a deficient energy intake. Under these conditions their productivity is seriously reduced."

Further it was estimated that of the lower income 70% of the population dietary energy intakes fell short of recommended minimums by 27% or 585 calories per person per day with a protein deficit of about 14%. /20

Historically, a large part of the Jamaican diet has been derived from the so-called food forest, which includes the tree crops breadfruit, avocado, citrus and ackee, a possible second canopy of root or tuber crops including dasheen, coco, sweet potatoes, etc.

High protein foods including fish, meats and cereal grain products have not been produced in adequate quantities to supply local needs and in recent years major quantities have been imported, particularly to supply the demand of the tourist trade and the more affluent local populace. The high cost of many of the high protein foods make them unavailable in the recommended quantities to balance the diet of the lower income group.

### 3. Education

Recent surveys of the labor force indicate that the great majority reported primary school as the highest level of education attained. In 1975, 5.3% had no formal education, down from 6.7% in 1974. Those reporting post primary school as the highest level of education obtained amounted to 14.0 percent in 1975, up from 11.2% in 1974 and 9.4% in 1973. Those reporting primary school as the highest level of school attained amounted to 78.9% of the labor force in 1975, down from 80.8% in 1974 and 82.8% in 1973. /21 (See appendix 1-27 and 1-28.)

/20 A Food and Nutrition Policy for Jamaica - with Programmes for Incorporation into the National Development Plan 1975/76 - 1977/78. Prepared for the Nutrition Advisory Council June 1974 revised in January 1975.

/21 The Labor Force 1975 - Department of Statistics - Jamaica.

The Jamaica School of Agriculture provides post secondary training in agriculture. In September 1975 its enrollment was 422, consisting of 164 pre-semester, 145 first year, 90 second year and 23 third year students. In February of 1975 a total of 92 students graduated from the school. Of this number, 9 were awarded the associate in Science Degree in Agriculture, 75 the Diploma in Agriculture and 8 the Diploma in Household Science. /22

University level training in agriculture is available to Jamaicans through the University of the West Indies. Jamaican Graduates from this school numbered 19 in 1974 and 12 in 1975./22

#### 4. Housing

Low income housing standards throughout Jamaica are poor. A large part of the houses have no indoor bathroom facilities nor running water, most have no electricity, and thousands have no toilet facilities at all. The average house is estimated to have between 2 and 3 rooms resulting in crowded conditions for family activities, sleeping, etc. Cooking of meals done in facilities separate from the main living quarters or done outside, is not unusual.

The Government of Jamaica has, through various programs, attempted to improve the general condition of rural housing. The Farm Housing program reported completion of 1,095 farm housing units in 1975 compared to 236 in 1974. /23

A farm housing subsidy scheme is currently operational through the Ministry of Agriculture. The subsidy authorized for 1975/76 amounts to \$500,000 to subsidize construction of 1,000 "2-bay" houses and 1,000 "3-bay" houses. /24

#### 5. Geographic Distribution of Rural Poor

Distribution of the rural poor may be closely related to the distribution of landless farmers and farmers of less than 5 acres of land.

Distribution of these farms by parish is shown in the following table:

/22 Economic and Social Survey, Jamaica 1975.

/23 Economic and Social Survey, Jamaica 1975.

/24 Project for the Rehabilitation and Development of the Pindars River and Two Meetings Watershed Volume 1 - UNDP/FAO JAM/67/505 Draft Technical Report 13.

Number of Farms with less than  
5 acres by Parish 1968/69\*

	<u>No. farmers with less than 5 acres</u>	<u>Ranking</u>
St. Andrew	7,169	12 ✓
St. Thomas	9,513	8
Portland	7,237	11
St. Mary	12,547	6
St. Ann	11,593	7
Trelawny	9,190	9
St. James	6,522	13
Hanover	8,063	10
Westmoreland	15,102	4
St. Elizabeth	15,132	3
Manchester	13,567	5
Clarendon	19,813	1
St. Catherine	<u>16,177</u>	2
Total	151,705	

\*Calculated from 1968 Census data.

It should be noted that the heavier concentration of the small farm units lie in the parishes of Clarendon and St. Catherine in the south central part and St. Elizabeth and Westmoreland in the western part of the country.

C. Characteristics of Major Target Sub-Groupings

1. Traditional Farmers

The traditional farmer has possession of 2.3 acres of land. It is usually on a moderate to steep slope. He will grow food for his family both from annual crops - yams, red peas, sweet potatoes, cassava, irish potatoes, dasheen, pumpkins, etc., and from food trees such as breadfruit, plantains, ackee, mango and citrus. He will plant a cash crop either as a pure crop or in mixed stands with other crops.

This may be sugar cane, banana, coffee, cocoa, citrus or vegetables depending upon his location and soil characteristics. In addition some of the food crops that are surplus to the family need will be sold. He might own a pig or two and several chickens. Some goats are kept and the lucky farmer has a cow that he tethers along the road, on a stream bank or on land in fallow. Typical farmer has 1/3 of his land in fallow at any one time.

In addition to his own land he might cash rent some land within a mile or two of his home and if there was some idle government land within walking distance he might farm a small patch of that. He might supplement his family income with off farm labor for a larger farmer in the neighborhood. This practice is usually restricted to landless or near landless rural workers since the very labor intensive activities of planting and harvesting does not leave idle time. The principal tools used would be the machete and hoe. A donkey or a mule might be owned to carry produce to the road where it could be loaded on a truck.

The typical traditional farmer would be 48.6 years of age. He would be supporting a family of four or five and one or two of them might be grand-children or other relatives under five years of age. His wife would work with him but labor from other family members is less common because when children reach a productive age they leave the farm for employment in an urban area. The average traditional farmer may be able to read. Surveys indicate that as many as 40% are functionally illiterate.

The average traditional farmer would attend church on Sunday and might belong to the Jamaican Agricultural Society. The local rum shop will be a major social contact for him.

He will sell his vegetables and fruit to the wife of a neighbor who takes them to the local market in her capacity of a "higgler". The average net cash income might be as high as \$727 for a family of six or a per capita income of about \$120.

The traditional farmer would not use fertilizer to improve his crops. He would probably not have had an extension agent on his property except an agent from the banana, sugar or coffee board if he is producing these as cash crops. In that case he may have acquired some fertilizer and pesticide that will be charged against his account when he markets his crop. About 40% of his income would be from the sale of an export crop.

## 2. Land Settlement Farmers

The Jamaican Government started "Operation Grow" - Project Land-Lease in April 1973. There are presently three aspects or

phases of this project. Phase one consisted of the leasing of small areas of land on a short term arrangement - up to five years - to existing farmers in an area. Phase two was basically the same approach with 49 year leases. Phase three consisted of giving land to landless farmers on a 49 year lease plan. Appendix No. 1-29 shows the results to September 20, 1976. A total of 22,583 tenants had been placed on 42,258 acres. Of this area 41,147 acres had been planted and crops valued at J\$6,527,087 had been harvested since the program started in 1973. See Appendix 1-29. Project costs through September 30, 1976 were reported to be J\$2,740,873.

The phase one farms on land that the government leases average 1.88 acres. It has cost the GOJ an average of \$740 per unit to establish these. Because of greater amounts of infrastructure requirement the phase two farms have cost \$2,531 and average 1.6 acres. The phase three farms which include housing average 4.75 acres in size and have cost \$8,667 to establish.

The cost of establishing these farms in the past and supplying credit to the farmers in the past has been done directly by the Ministry of Agriculture. It has now been agreed that future credit needs will be provided by the JDB through IDB loan funds. The credit supervisors from JDB will prepare farm plans as they are presently doing for SSFDP farmers.

See appendix No. 1-30 for comments on this program as taken from - "A Sociological Survey of Tenant Farmers on Project Land-Lease" by Dr. Carl Stone, Senior Lecturer, Department of Government, U.W.I. The survey was made in 1974.

### 3. Landless Rural Laborers

There were estimated to be 68,000 laborers employed in Agriculture, forestry and fishing as of October 1975.\* It is difficult to get a true picture of the landless laborers. There are in reality four classes of rural laborers. First is the landless farmer. The agricultural census defines a farm as having at least -

- (a) one square of cultivation (i.e. 1/10 of an acre);
- (b) twelve economic trees;
- (c) one head of cattle;
- (d) two head of pigs, goats or sheep;

\*Department of Statistics - The Labor Force - 1975.

(e) one dozen poultry;

(f) six bee hives.

The census shows 4,768 landless farmers or people who would fall in categories (c), (d), (e), (f). These could be people who graze their animals along the sides of the road, or on other people's land.

Second is the rural laborer with a house on a small area of land that is large enough to have a few food trees and some room for a garden. He grows some of his own food but all of his cash income comes from working for farmers in his area, usually farmers who own less than ten acres of land who need to supplement the family income during peak season activities. This man would work about 150 days during the year for about \$4.00 a day. The Government pays \$5.30 per day for workers on their Impact Work Program but private farmers do not pay this much. Part of the daily wage may be paid in the form of farm produce.

The third category are those employed to work in the sugar and banana industries. They represent about half of the hired labor force in agriculture. These workers live in housing furnished by the employer on the estate or in small villages adjacent to the area where they are employed. These workers receive an average wage of \$6.00 per day and are employed 150 days during the year.\*

The final class of workers are those participating in cooperative farming schemes that has been started by the Government. This consists of sugar plantations that have been purchased by the Government being turned over to the workers to operate in a cooperative manner. There are presently 20 such schemes and 3,500 workers are involved.

In general there is little temporary emigration of rural laborers from one area to another seeking employment. During the part of the year when there is greatest demand there is a shortage of unskilled workers especially in the export industries such as sugar and banana production. There is a stigma attached to wage laborers in the agricultural sector which is more significant with the more difficult physical labor such as sugar cane harvest.

#### D. Role of Women in the Sector

Women have traditionally played an important role on the small farms in Jamaica. Under the recent Land-Lease projects described above 16% of the farmers given land have been women. The woman is an important factor also in the output of the typical farm. She

\*These are estimates since no reliable figures could be obtained.

not only bears the children, cooks the meals and does general house work, she works with her husband on the land. Under the labor intensive system followed the amount of labor available for planting and harvest is a limiting factor to the amount of land that can be cultivated so a strong healthy woman is a real asset. Women tend to be about the same age as their husbands or a little older. The latest figures show the typical farmer to be 48 years of age and his wife to be 50. The younger farm family with the wife usually occupied with bearing and looking after small children has less available labor than the older family where the wife's labor is more available to help in the field. A population control program limiting the size of farm families should help increase agricultural production.

E. Target Definition

The rural poor of Jamaica make up at least 80% of the total number of farm families. The 1968 census indicated that there were 193,400 total farms with 151,700 in the 0-5 acres. The target group is the 150,000 farmers who are the poorest of the poor. Some of the farmers in the 5-10 acre grouping based upon their per capita income would also fall into the target group. Although they have slightly more land because of climatic or physical characteristics it may not have the productive capacity. The 1968 census gave the GDP per farm as \$287. It is estimated that with 1976 prices the target group would have a per capita income of less than \$200.

## II. IDENTIFICATION AND ANALYSIS OF CONSTRAINTS TO THE DEVELOPMENT OF THE RURAL POOR

### A. Natural Resource Base and Characteristics\*

The island of Jamaica is the third largest of the Caribbean islands and the largest West Indian island in the British Commonwealth. It is 146 miles from east to west and the maximum distance from the north to south coast is 51 miles. The country has approximately 4,400 \*\* square miles or 2,816,000 acres.

Jamaica has rugged terrain with many hills and valleys. In fact about half of the country is over 1,000 feet above sea level and about 40 square miles over 5,000 feet. The island can be broken down into three broad categories which are:

- (1) the interior mountain ranges
- (2) the dissected limestone plateaus and hills
- (3) the coastal plain and interior valleys.

#### (a) Topography

The reference map clearly shows the coastal plains in the south and to a lesser degree in the north that have been historically important in the agricultural development of the country. The map also shows the location of St. Thomas-in-the-Vale, Nassau Valley, Queen of Spains Valley. The topography of the country determines the type of agriculture that can be practiced and has influenced the land tenure patterns.

The accompanying chart indicates the amount of land in various slope categories. Thirty-nine percent or 1,068,000 acres can be considered level, i.e., with slopes of less than 1 : 10. Twenty-eight percent or 760,000 acres is considered to have moderate slopes of 1 : 10 to 1 : 5 with the remaining 33% comprised of steep to very steep slopes. In summary the topography of the land is a limiting feature to the use of almost 2/3 of the total land area of Jamaica.

See following Topography map.

\* The main source for the information in this section is the National Atlas of Jamaica" November 1971 - Ministry of Finance and Planning

\*\*Recent figures by the Government Survey Department indicates an area of 4.382 sq. miles or 2,715,829 acres.

You find 1/3 of the land suitable for mechanized farming, about 1/3 with moderate slopes that are productive agricultural areas but subject to erosion and in many cases not permitting itself to mechanization or large scale farming and the remaining 1/3 with slope's too steep to lend themselves to efficient farming but can be used effectively in some cases for tree crops, citrus, bananas, coffee and also is the area that is indicated for reforestation.

(b) Climate

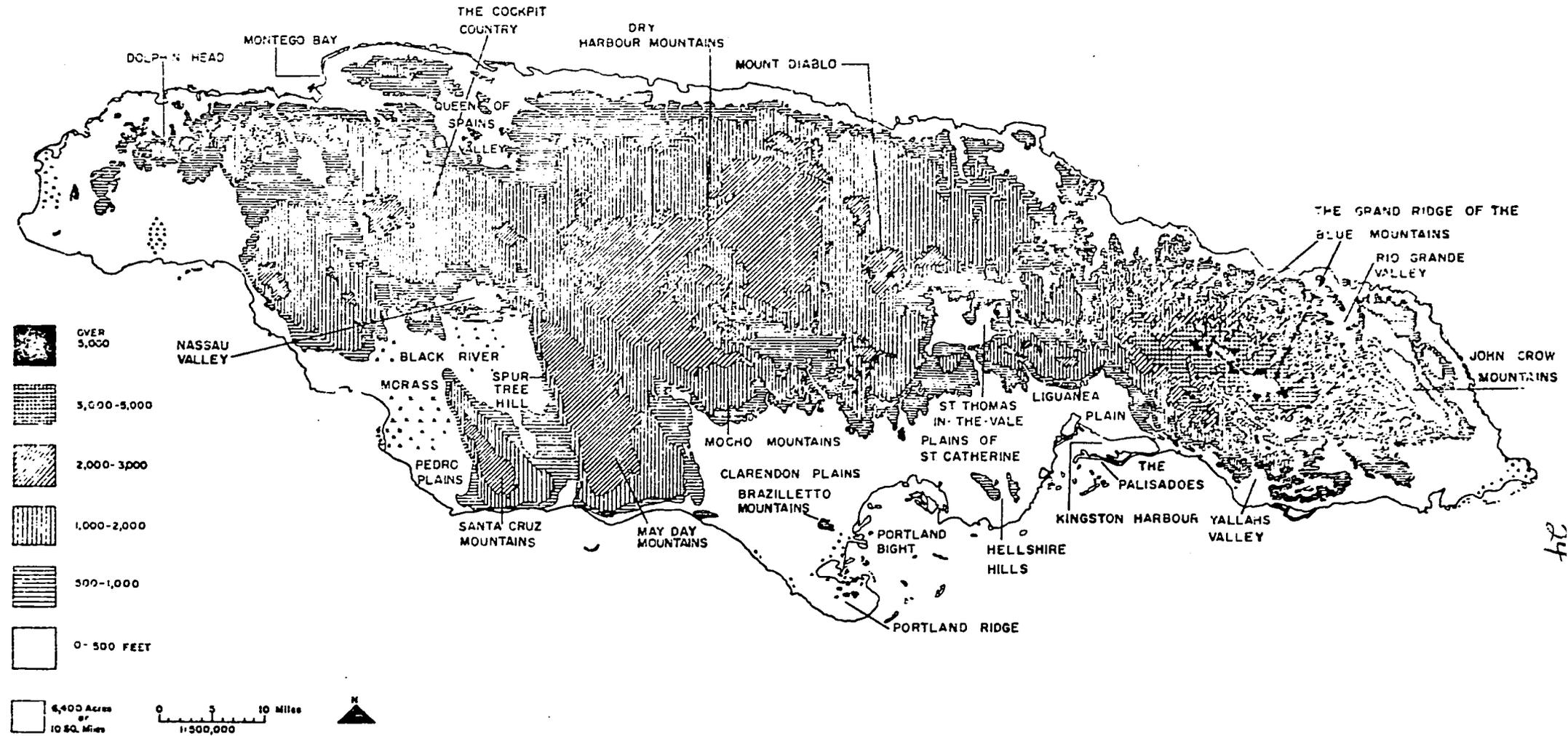
Jamaica has an excellent tropical climate that provides the basis for economic development and assumes a pleasant environment. The regular North-East Trade Winds brought about by its location between the sub-tropical high pressure and equatorial low pressure belts of the Atlantic serve to temper the climate. The trade winds blowing against the high mountains in the eastern part of the islands tend to create wide scale variations in rainfall and this fact coupled with the temperature differential caused by differences in altitude produces a large number of micro-climates on the island.

The rainfall records are characterized by their variation from year to year, month to month and geographical location. The highest annual rainfall average is recorded at Bowden Pen in the Blue Mountain with 309.0 inches. Kingston on the southern coast has an average annual rate of 35 inches and the data from nine stations shows a national annual average of 77 inches. The terrain as indicated above causes a great deal of local variation. It is significant to note that large areas of the level coastal plain on the Southern Coast receive less than fifty inches and a large part of the best agricultural land receives less than 70 inches. The high temperature and other influencing factors cause a high loss through evaporation and evapo-transpiration from vegetation. This has been estimated to be in the range of 55%. It is also estimated that 37% of the rainfall is discharged into the Caribbean without being used for any useful purpose in Jamaica. These conditions coupled with seasonal and annual variations make lack of moisture a serious constraint to agriculture despite the apparent high rainfall. These situations have brought about the need for wide scale irrigation systems for plantations and points up the need for water conservation practices and tillage systems by the farms on the lands with steeper slopes that will decrease the run off and encourage percolation.

There is a seasonal variation of rainfall that gives a dry season during the winter months from January - April and with two peak seasons found in October - November and May - June. There are also very dry years that lead to reduced agricultural production and serious problems.

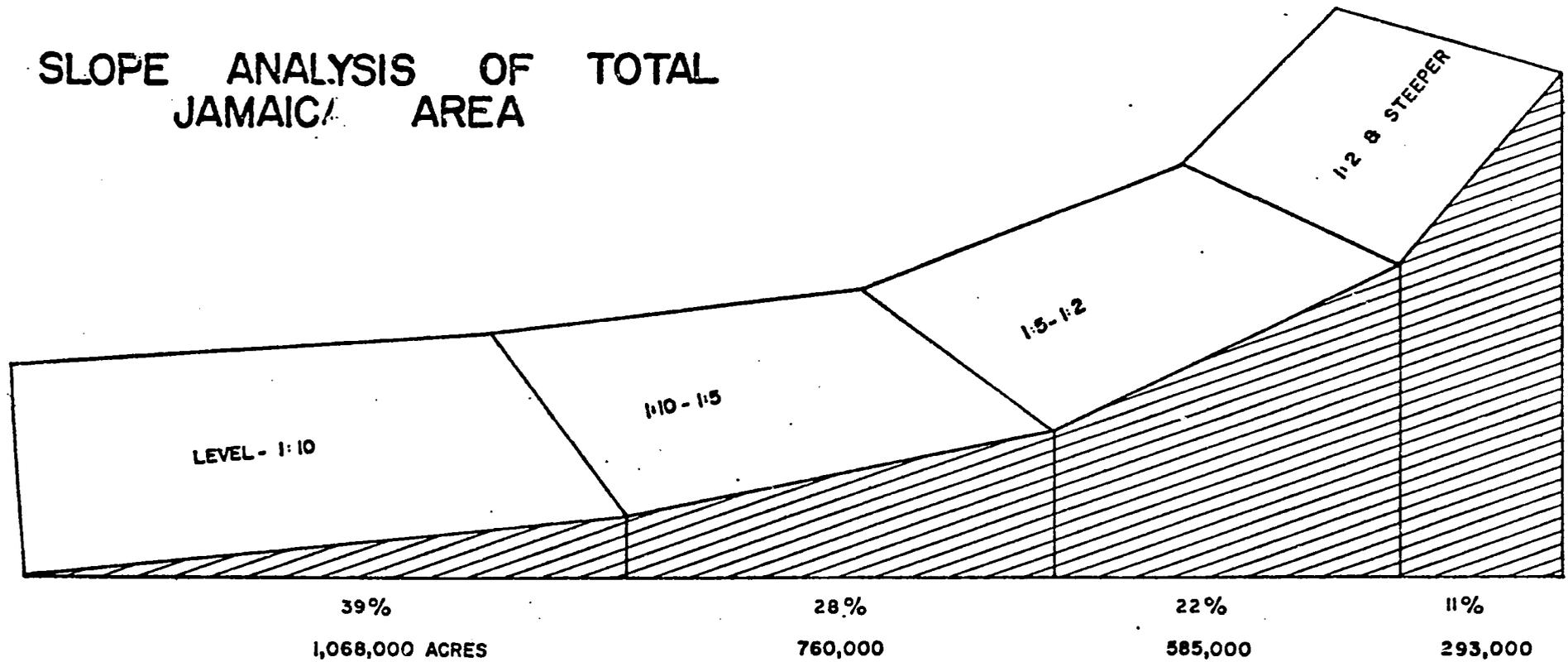
...../

# TOPOGRAPHY



National Atlas of Jamaica - November 1971

# SLOPE ANALYSIS OF TOTAL JAMAICA AREA



National Atlas of Jamaica - November 1971

Hurricanes and tropical storms are a factor that must be considered in any study of the climate of Jamaica as related to agriculture production. An analysis shows that in the period between 1886 and 1967 that 19 had tracks which directly hit Jamaica and 98 (of which 48 were of hurricane force) had centers within 150 miles of the island. About 1/3 of these storms caused flooding and damage of varying degrees. Storms of this nature will skew the weather data and are a destructive force that must be considered as agricultural development plans are considered. The frequency of the tropical storms and hurricanes is sufficient to indicate that as often as every three years they are a force that have to be considered. The damage caused by these storms is especially critical in areas with greater slope where most of the small farms in the country are located.

(c) Water Resources

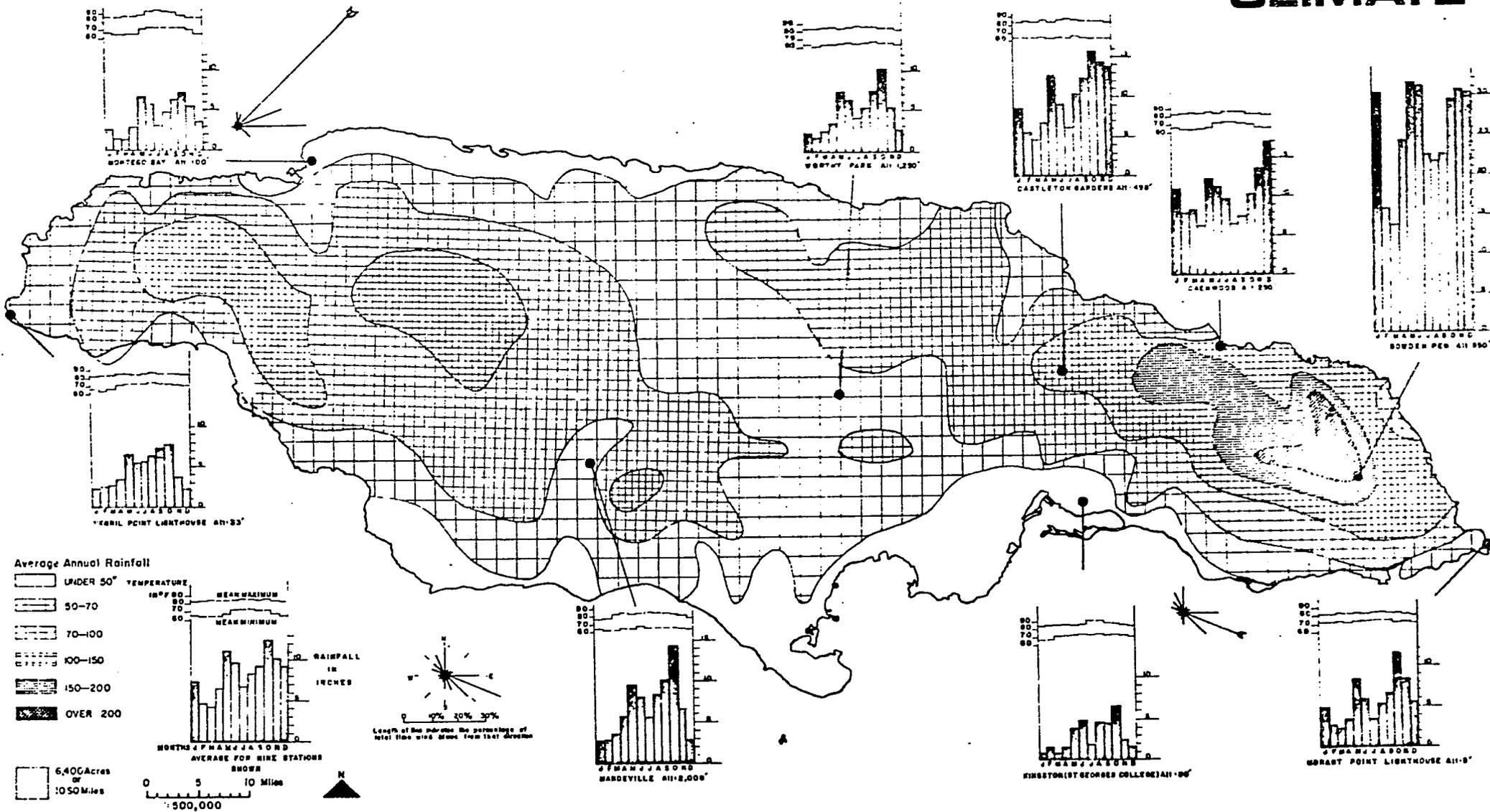
The loss of water through river flow was mentioned above but the importance of this factor should be restated. It is estimated the Jamaican island receives 13,500 million gallons of water daily in the form of annual average rainfall. It is estimated that the total river discharge into the Caribbean is 5,000 million gallons per day. Four of the biggest rivers have a combined discharge of 1,500 million gallons per day and many others over 50 million gallons. The seasonal variation is great and there is a considerable variation from river to river depending upon the type of geological material in the catchment basin. For example the Martha Brae has a limestone catchment area which because of its permability holds some water throughout the year and this tends to provide a more even year-round flow with a ratio of average peak flow to average low flow of 8 : 1. On the other hand the Hope River whose catchment is comprised of volcanic derived sediments has an average peak to average low flow ratio of 106 : 1.

The geological structure of the island in a large part determines the location and depth of ground water. The areas of relatively impermeable volcanic and associated rocks found mostly in the eastern part but also scattered through central and western Jamaica contain no ground water deposits except in small scattered localized locations. Plentiful ground-water generally occupies the large areas of permeable limestones and alluvial plains in the north and south central plains and the eastern coastal region.

Water depth becomes a major factor in development costs, especially in the limestone uplands where the water table can extend as far as 2,000 feet below the surface.

See Climate map on following page.

# CLIMATE



The groundwater level at Mandeville and Linstead is at approximately 1,000 feet below the surface. In general at lower elevations the groundwater potential is greater and the pumping costs are less. Alluvial aquifers are also an important and quite a predictable groundwater source. Some of these coastal plains aquifers have been developed but an accurate survey of their potential has not been made. Sea water intrusion in coastal areas is a potential problem and this resource should be controlled. Detailed surveys should be conducted prior to any development plans that would include major irrigation efforts from groundwater sources.

(d) Soils and Land Capability\*

Soils

Quality and distribution of soils in Jamaica are related closely to agricultural production, a major component of the country's economic base. Jamaica's soils fall into three broad categories based on location and derivation:

- (1) Highlands;
- (2) Upland plateaus; and
- (3) Alluvial plains and valleys

Soils of the highlands are found generally above 3,000 feet and are derived from ancient igneous, volcanic and metamorphic rocks. One type of highland soil, the lithosols, are young with high porosity so that leaching is heavy, leading to acidity and a paucity of nutrients. These soils are generally infertile except under forest conditions, when an upper soil layer with high organic content is developed. The other highland soil type is clay, produced by the weathering of fine-grained sedimentary rocks (shales). Drainage is poor and the clay soil is generally less acid. The top soil layer consists of dark brown clay loam with humus material. Both types of soil are liable to rapid surface erosion after removal of the forest.

Soils of the upland plateau are derived from limestone and fall into two types: terra rossa or red limestone soils and rendzinas or black marl soils. Terra rossa is the name applied to the residual bauxite soils which occur mainly on the upland plateau of Manchester and St. Ann parishes at an elevation of 2,000 to 3,000 feet. They are developed from the weathering of white limestone through solution and are typically coarse and porous in texture. Terra rossa soils are usually much leached, acid, well oxidised and dehydrated. The red colour is due to iron oxide. Soil depth over the limestone plateau varies greatly. The surface has a high content of organic matter on which agricultural use depends.

\*From National Atlas of Jamaica - November 1971.

The black marl soils or rendzinas are developed over yellow limestone and marls. These soils are fine particled, heavy and have poor drainage. High calcium content and wetness prevents development of the red colour typical of the bauxite soils.

Alluvial soils are located on the extensive plains in southern Jamaica, some of the very narrow plains along the north coast and in the interior valleys, notably St. Thomas-in-the-Vale, Queen of Spain's Valley and Nassau Valley. These soils have been deposited by rivers and are composed of loam, sand and gravel. The most productive agricultural activity is located on these soils. Areas also occur where the surface alluvium is of marine origin where heavy clays from 3 to 4 feet deep have been deposited over the riverine alluvium. Swamp soils also fall into the alluvium category.

One of Jamaica's major environmental problems is the large amount of soil erosion that has taken place and still is occurring throughout the highlands. After an intensive rain, the rivers are muddy and brown with eroded material being carried from the hillsides. Much of this material, often valuable top soil, is lost forever into the sea. Erosion in Jamaica results from a combination of steep-sided hillsides, high rainfall, fast flowing rivers and historically poor agricultural practices on the uplands coupled with deforestation. An example of the ravages of soil erosion resulting from inappropriate agricultural practices on steep slopes is the Yallahs Valley where a survey indicated that there was a loss of 75% or more of the top soil over considerably more than half of the valley.

(c) Agricultural Land Capability

The following land capability map is based upon a modification of a system developed by the Faculty of Agriculture of the University of the West Indies in its Soil and Land Use Surveys of Jamaica. The chart is self explanatory with the lowest number classes having the highest capability and Class V being rated as not suitable for agriculture. The suffix letters indicate the principal limiting factors within the land capability classes as follows: "C" climate which in Jamaica consists of a combination of low annual rainfall and a long dry season; "W" limiting is poor natural drainage leading to an excess of water in the soil; "E" limiting factor is slope and susceptibility to erosion.

The map indicates that Class I or the land of highest capability is very limited and is found in small areas along the north and south coasts.

# AGRICULTURAL LAND CAPABILITY



National Atlas of Jamaica - November 1971.

Class IV - lands marginal for cultivation but suitable for tree crops is the most extensive category and includes about one-half of Jamaica's land area. This land is also suitable for improved grass and for agricultural purposes on the less severe slopes with careful attention to erosion control. In a large part the small Jamaican farmers are found in areas with this type of land capability.

In summary the natural resource base of 2,816,000 acres has many constraints restricting increased agricultural production. These include the slope factor of the land with only 39% that can be considered tillable under normal conditions. Although the natural average rainfall averages 77 inches there is a considerable variation in different parts of the island and considerable variation from year to year as well as seasonal variation. Much of the rainfall is lost because of rapid runoff due to steep slopes and impervious soil. The groundwater resources are not fully known but in the limestone areas are at a level that makes utilization difficult and expensive. There is danger of salt water intrusion from over exploitation of groundwater found in the coastal plains. The most productive alluvial soils are found on the coastal plains that are limited in area, largely fully exploited and partially removed from agricultural production because of urban development. The major limiting factor affecting agricultural land capability is degree of slope which in turn causes erosion.

#### B. Production System Constraints

The production system constraints are in general a combination of the factors discussed above under the Natural Resource Base which might be called natural constraints or limiting factors and those additional constraints found because of social, economic, historical and political factors.

##### (a) Land Tenure (Distribution and Use)

The present land holding and use patterns have grown out of the historical development of agriculture in Jamaica. Plantation agriculture that developed during the 17th, 18th and the early part of the 19th century utilized a great deal of slave labour. The number of slaves increased greatly and it was estimated in 1789 that 250,000 lived on the plantations. After the slaves were freed in 1838 they largely left the level coastal plain plantations and occupied the hilly steep land unsuitable for plantation agriculture and livestock production. In general remains of this pattern can be seen today with the former plantations occupied by large sugar estates either privately or government owned and the majority of the agricultural population living on and tilling the steep slopes of the interior.

The badly skewed pattern of land holdings is shown by the following data from 1968/69 Agricultural Census:

Farm Size acres	Number of Farms		Farm Land	
	'000	percent of total	'000 acres	per cent of total
0 - 5	151.7	78.4	229	15.4
5 - 25	37.6	19.5	341	22.9
25 - 100	3.1	1.6	127	8.5
100 - 500	0.7	0.4	148	9.9.
over 500	0.3	0.1	644	43.3
Totals	193.4	100.0	1,489	100.0

As indicated above the pattern of land distribution is basically such that

the larger farms generally occupy the best and most level lands while small farms are generally on steep, less fertile land, much of it unsuitable for sustained cultivation without appropriate soil conservation measures.

It should be noted that in the seven years since the Census data was taken that there have been serious efforts by government to bring about land distribution. This effort however will not result in any large statistical variation in the position of the small farmers.

The Green paper on Agricultural Development Strategy states:

"The number of 'farmers' as defined in the 1968 Census of Agriculture included many who technically speaking are rural dwellers rather than farmers. For example, the number of persons operating farms less than 10 acres was 147,000. The estimated number of farmers who fall into the under 10 acres size group is 172,000 with an average farm size 2.3 acres. This group includes thousands of farmers who are in the subsistence category and have been responsible over the years for a large percentage of the food produced for local consumption. Many schemes regarded largely as welfare schemes have provided assistance to farmers in this group. The goal is to create economically viable farms by increasing their average size and productivity. For example, by increasing the average size of small farms by 50 percent, and yields by 50 per cent, the latter as a result of applying improved

practices, their output could be doubled. The additional land for increasing the size of many of these could come from the large acreages of idle lands which exist."

2. Crop Mix - *Clarify*

The actual use of the approximately 1,500,000 acres of agricultural land in the country is highly speculative. The main crops in pure and interplanted stands in 1970 were estimated as follows:

Main Crops in Pure and Interplanted Stand

Sugar Cane	168,000 acres
Coconut	100,000
Banana	84,000
Cocoa	27,000
Citrus	25,000
Tree Crops	27,800
Ground provision	18,200
Legumes	13,500
Vegetables	5,000
Coffee	15,000
Others	11,200
<b>Total</b>	<b>494,700</b>

The total of less than 500,000 acres shown here or only 1/3 of the available land indicates the amount of idle land in fallow and brush and the land not utilized because of factors such as slope, drainage and poor soil. Land utilization was also reported in 1970 as follows:

Land Utilization

<u>Subject</u>	<u>Acreage</u>
Total land area	2,715,000
Total area in farms	1,500,000
Intensively utilized	750,000
Idle lands (estimated)	225,000
Remainder	525,000

The following table shows what production should be at this time and the Crop Mix.

Agricultural Projections 1970 - 1975 (Aeres)

<u>Crop</u>	<u>1970</u>	<u>1975</u>	<u>Difference</u>
Sugar Cane	167,700	151,000	- 16,700
Bananas	84,000	84,000	No Change
Coconuts	100,000	110,000	+ 10,000
Citrus	25,000	37,600	+ 12,600
Ground Provision	18,200	20,600	+ 2,400
Selected Vegetables	5,330	13,735	+ 8,405
Selected Legumes	13,500	27,735	+ 14,235
Peanuts	1,000	4,000	+ 3,000
Cocoa	27,000	31,200	+ 4,200
Coffee	15,000	20,000	+ 5,000
Other Tree Crops (1)	27,865	31,850	+ 3,985
Tobacco	1,900	6,500	+ 4,600
Maize	8,000	10,000	+ 2,000
Pineapple	1,300	2,500	+ 1,200
Improved Pasture	250,000	340,000	+ 90,000
Forest (Commercial)	16,000	31,000	+ 15,000
<b>TOTALS</b>	<b>761,795</b>	<b>921,720</b>	<b>159,925</b>

It is predictable that there will be changes in agricultural land holdings over the next decade. The GOJ is moving ahead to resettle landless people and others with less than economic sized holdings through the landlease programme. Some of this land will come from idle or under-utilized land and some will probably be from sugar cane land that is taken out of production.

3. Livestock Production is an important component of agricultural development. There are major areas only suitable for grazing. Many small farmers own livestock. The 1969 - 1970 Agricultural Census showed the following figures:

Cattle	278,710
Goats	208,106
Sheep	6,214
Pigs	206,893
Chickens	3,727,168

In addition many of the small farmers own donkeys or mules that are utilized in transporting agricultural products to road sites where they can be picked up by motor vehicles and taken to market.

It is interesting to note that the Agricultural Census included 4,768 farmers some of whom graze their animals along the sides of the road, or on other people's land. In this category anyone who owned one head of cattle, two head of pigs, goats or sheep, one dozen poultry or six bee hives was considered a farmer.

Jamaica is basically self sufficient in the production of pork. A Peace Corp survey indicates that 60% of the pork is produced by farmers with less than five sows. This industry is based primarily on the importation of prepared feeds from abroad with the exception of small farmers who keep a pig or two and use kitchen and crop wastes to feed them. A basic constraint to the consumption of more pork is the high price to the consumer. It is reported that there is a lack of price elasticity because the producer will not sell for less than \$0.60 a pound at the farm gate. If there are no buyers at this price they continue to feed them and the result is a hog that is too fat and high cost feed is wasted.

Many of the small farmers keep a few chickens for their own use. They use the eggs for home consumption or sell them to their neighbours or at the local store. Chicken is a major animal protein source for the rural people. The bulk of the poultry that is produced in Jamaica however is by large commercial producers utilizing intensive management systems and is marketed in the urban centres.

Estimated Farm Animal Numbers from  
1968 - 1969 Agricultural Census \*

<u>Type of Animal</u>	<u>Total Numbers</u>	<u>Percentage on Farms 1 - 5 Acres</u>
All Cattle	278,710	11.59
Dairy Cattle	34,898	14.41
Beef Cattle	183,654	9.56
Dual and Draft Cattle	60,158	16.18
Mules and Donkeys	37,083	42.80
Horses	3,603	14.35
Breeding Sows	24,869	0
Other pigs	182,024	0

\*The Census report suggests that there may be an under estimate of animals in some classes of as much as 30%.

0 Amount of land not a significant factor.

Cattle are prized possessions of the small farmers. They are looked upon as a means of increasing the family income with a minimal labour input that is distributed throughout the year. In general they are tethered on land not suitable for cultivation; along streams, on land that is being held in fallow or on ruinate (brush land formerly in agriculture), and along roadways. Some grass is cut and fed to the cattle but it would appear that they mainly are allowed to graze. There is little indication of any fencing by the small farmer to confine his cattle. They are staked out and moved frequently from place to place and led to water two or three times a day. The cattle are usually in good condition. Due to the intensive management and the proximity of the cattle to their owners problems such as screw worm and ticks that exist with cattle grazed in an extensive area should not be a problem. The possession of livestock of any type is a ready source of cash for the small farmer. If an emergency occurs there is ready sale for a cow, a goat a pig or a chicken so that money can be obtained. Owning livestock is as good as money in the bank.

Livestock production among small farmers may be inhibited as reported in the study, "Small Farming in Jamaica" by David Edwards: "the fear of causing trouble with persons occupying land near to their own prevented many farmers from keeping goats, pigs and poultry. They realized that as they could not keep their animals safely confined they would have to pay compensation for any damage to their neighbour's crops or bad personal relations would have followed."

Production of dairy products is also a major endeavour of some of the rural poor. A significant proportion of the milk that is processed by the condensed milk plant is produced by small farmers who own two or three cows. Their milk is picked up daily by trucks from the factory collection points on the main road where it has been transported by the small farmer. This activity is limited by location - proximity to the factory and collection points. Improvement in this sector of the economy has been recommended by the World Bank. Increased dairy production could be obtained without any change in the present land utilization pattern simply by improving the quality of the animals and better husbandry practices. The technological transfer of knowledge in the dairy industry section made up of small farmers is difficult and the pay off is delayed because of the natural cycle but the GOJ recognizes the importance of the dairy industry both for additional milk and meat production.

It should be noted that Jamaica imported dairy products valued at \$15.9 million in 1975, \$25.8 million in meat and meat products and the trend is upward both in quantity and value.

#### 4. Farm Systems and Technology Level

Farming systems vary throughout the country influenced by climatic topographical, and geographical location. The typical small farmers own less than five acres and the average holding is only 2.3 acres. The steep land on the farm that can not be planted may be occupied by a food forest. This will consist of haphazard mixture of trees that have grown up over the years from seeds that have been thrown out by the family or planted in a random manner.

The 1968-69 Census defined food forest as "cases where a canopy of tall economic trees existed (breadfruit, star-apples, mango, avocado pear, etc) in association with or without a lower canopy of cocoa, coffee, citrus and other small trees and shrubs and sometimes a third layer of herbaceous crops, in spaces where the light permits such as Kale or Calaloo." The Census reported that 23,490 acres or 1.58% of the total land in crops was in food forests. This does not include the many occasional food bearing trees scattered among the arable land. The food forest is a valuable resource for the rural poor and provides a large share of the total diet consumed by the rural dweller. Surplus to the family needs is also marketed. It would appear that the present technological practices followed in food forest production have developed over the years based upon individual experiences. Present knowledge probably does not exist to make major improvement and this should not be a high priority item.

Yam production was reported to be widespread throughout the island with Irish potatoes limited to certain specific areas. The total acreage devoted to these crops can not be determined from available data because of the mixed cultivation system but they are an important part of the agricultural system. Sweet potatoes and other root crops such as dasheen are also grown both for food and marketing.

The yam, an important part of the diet of the poor is also marketed in large quantities. It is very labor intensive requiring more than 300 man days per acre with a peak period of labor intensity of about four months. The typical yam producer uses little fertilizer and rotates his crop each year and allows the land to regain fertility while lying fallow for two or three years. The return to labor is low but the possibility of failure with this crop is also low because it is not affected by disease or parasite problems.

The amount of family labor is the major constraint on increasing production and land is not always a major limiting factor. The introduction of terracing on hillsides through a soil conservation programme would allow the use of small hand tractors that would allow small farmers the opportunity of increasing their acreage. The prevention of erosion and the use of fertilizer would also allow continual cropping. This would allow the increase in the total yam acreage or the production of other crops. The amount of available family labor and the need to allow land to remain fallow are two serious constraints to increased agricultural production.

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Sugar Cane, bananas, citrus, coconut, cocoa and coffee are also important crops for the small farmers. Their production of these crops supplements the production of larger farmers who generally occupy the better level lands and whose production systems allow mechanization. The 1968 - 69 agricultural census gave the following acreages in pure stands:

<u>Crop</u>	<u>Acres</u>
Sugar Cane	157,386
Bananas	41,447
Coconuts	39,291
Citrus	18,188
Coffee	7,419
Cocoa	7,003
Yam	25,851
Irish potatoes	1,920

The production of the smaller poor farmers is usually grown in mixed stands and would not all be reflected in the above figures. In most cases they are at a disadvantage because they do not receive the technological assistance given to the larger farmers by the existing marketing boards and extension service

#### C. Credit and Financial Constraints

At the present time agricultural credit is being dispensed by too many agencies. This results in making it difficult for the Ministry of Agriculture to use it as a means of initiating change or as a tool to influence systematic production. In addition because it is granted by so many agencies, both within the Ministry and outside, it is impossible to regulate the allocation of scarce resources between the various agricultural programmes.

The major official sources of credit are:

1. the Agricultural Credit Board which makes loans directly to farmers through 115 People's Co-operative Banks and 10 approved organizations for reloan to their members.
2. Jamaica Development Bank
3. Project Land Lease
4. Commodity Boards (Coffee, Banana, Sugar.)

The Agricultural Credit Board (ACB) currently is operating with an \$18.5 dollar revolving fund. It was established in 1960 and operates as a Statutory Board appointed by the Ministry of Agriculture. The ACB lends money directly to medium and large farmers and through the People's Co-operative Banks (PCB) to the small farmers. Money is loaned on terms of 2 - 15 years at a standardized rate of 6% per annum.

By law the PCB's may approve loans up to \$1,000 but over that amount ACB approval is required. In order to borrow from the PCB the farmer must be a share holding member. It is estimated that 120,000 small farmers are members of the PCB system and indebted to these institutions. This is by far the most important form of official credit to the small farmer. ACB has a field staff of 17 Credit Officers who supervise loans and make farm plans. In general the PCB's control the loans directly. Many of these banks are behind in their payments to ACB. Members buy shares and this money is loaned without ACB control. No loans have ever been written off and bad debts going back 50 years are still on the books. Land is usually required as a security on medium and long term loans but very seldom is the loan foreclosed and the property sold.

The latest figures for the Agricultural Credit Revolving Fund are:

	( Millions of Dollars)
	Money outstanding
P. C. Banks	\$10
Direct Borrowers	3.7
Land Authorities	1.6
Other Approved organizations	2.7
Other loans	.2
Special loans	.3
	<hr/>
	\$ 18.5
	<hr/>

Activities in the ACRF can be seen from the following table

	<u>1973 -74</u>	<u>1974-75</u>	<u>1975-76</u>
P. C. Banks			
Issues	1,170,338	2,280,993	1,740,698
Collections	1,693,002	1,668,212	1,736,817
Direct Borrowers			
Issues	433,353	825,729	1,303,265
Collections	303,478	618,494	513,678

cont'd.....

Land Authorities			
Issues	535,517	131,785	-
Collections	293,028	448,644	301,251
Other Approved Organization			
Issues	230,144	182,000	84,000
Collections	58,292	48,079	89,117

This table shows that \$3,127,963 was loaned to the specified clients in 1975 - 76 and \$2,640,863 was collected. In addition to their roll-over the ACB has been given \$750,000 per year for each of the last three years to expand their revolving fund. In August of 1976 they were promised an additional \$1.5 to be immediately available for agricultural Credit but six weeks later that money was not in their hands. The ACB reported in October of 1976 that the only money they had for loans was the approximately \$50,000 they were receiving each week from collections and there were many pending applications from the small poor farmers. See Appendix 2 - 1 for a discussion of agriculture credit in general and ACB in particular.

The Jamaica Development Bank (JDB) was established in 1969. This bank has served as a conduit for IBRD loan funds. These loans are mainly directed toward medium and large size farming operations. They lend up to 80% of the estimated project cost at 8<sup>3</sup>/<sub>4</sub>% interest. The JDB was also made the government's agent for handling the Self Supporting Farmers' Development Programme for small and medium farmers. This programme had previously been managed by the Agricultural Credit Board and is funded by three different loans from IDB. These loans are aimed at the farmers with 5 - 25 acres who have a reasonable chance of increasing their annual income to at least \$900. The minimum amount of the loan is \$1,000 and the maximum \$25,000. They have loaned J\$20,859,323 to 3,992 borrowers as of June 30, 1976. See appendix 2 - 2 for a complete break down. They lend the IDB funds at 4% interest and have over 90 former extension agents working as loan supervisors.

Project Land Lease provides the necessary inputs for farmers under the land settlement programme. They are provided with seed, fertilizer, pesticides and land preparation on a short term basis and housing on a 25 year basis. They are expected to repay these loans through selling their crops to the Agricultural Marketing Corporation.

The Commodity Boards lend money to associated farmers for production and planting costs. These loans are in turn repayed when the farmers sell their product through the boards.

This relative simple explanation of the credit institutions does not really indicate the complexity of the system. There is a great deal of over-lapping in the system with both ACB and JDB drawing up farm plans and commodity boards competing to persuade farmers to plant their particular crop. The "Green paper" on "Agricultural Development Policy" and the Ministry of Agriculture "Review of Organization" recommend the establishment of an Agricultural Credit Bank.

One of the credit constraints to small farmers is the requirement that they must have valid title to the land on which the crop is produced and this land becomes a guarantee for repayment of the loan\*. This would serve to inhibit the smaller farmers from borrowing either because they don't have clear title to the land or because of their fear in losing the land. Land ownership has a great deal of importance to the small farmers and there is a reluctance to borrow money for technological changes that carry a risk of possible failure.

In general it can be stated that lack of credit is not a serious constraining production factor to the small farmer but the timeliness of the loan procedures to obtain it, and the administration of the credit are definitely limiting factors.

#### D. Marketing Systems Constraints

Export crops are marketed through the various Commodity Boards and the Sugar Manufacturers Association. They all work independently of each other and it would appear that a more efficient system could be developed if there was some coordination in marketing activities particularly in the areas of transportation and shipping. In many cases Government meets some of the expenses of the Boards from the general revenue fund. Despite this fact the margin between Boards' revenue and farmers' prices tend to be rather high. Generally unit costs are high and prices to farmers fail to reflect levels of revenue received by the boards.

Agricultural products for local consumption and processing are marketed in various ways. In general, marketing costs are high and the producer receives a relative small proportion of the consumer dollar.

The traditional form of marketing local production is the "Higgler" system. This system consists of small traders who buy vegetables, fruits, etc., from the farmers or from the Government sponsored Agricultural Marketing Corporation and sell them in some 100 retail markets throughout the island. These markets vary in size from the seven acre Coronation Market in Kingston with hundreds of vendors to small parish markets with as few as ten. The higgler in these local markets often are farmers wives selling their own produce and that of their neighbours.

\*Note - It is reported that a lease agreement is acceptable and in fact people occupying land without title may borrow on signature alone. however many small farmers are presently outside the credit system.  
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The produce is transported on local buses, trucks and even by donkey if the distance is not too far. It is estimated that 3,000 people are fully employed in this marketing system and as many as 30,000 on a part time basis. The higgler system handles between 70 per cent and 80 percent of domestic food crops.

The Agricultural Marketing Corporation was set up by the Government in 1963 to absorb and expand the activities of the Marketing Department which had been established during the second World War.

The AMC has as its main functions:

1. to provide and maintain adequate marketing outlets for agricultural produce grown primarily for domestic consumption;
2. to buy and sell agricultural produce;
3. to provide for the collection, transportation, storage, grading, packing and processing of agricultural produce;
4. to import and export agricultural produce; and
5. to distribute agricultural output in the local economy.

The AMC is estimated to handle less than 20% of domestic crops. In addition to its central market in Kingston it operates 8 branches and 122 buying stations. It sells produce in 16 major retail outlets, to higglers, to supermarkets and to processors.

In order to help the people with the lowest income the AMC has a department of basic shops and mobile units. These 40 shops and 50 mobile units sell produce at 20% below market price and last year had a volume of J\$2.56 million. These shops are located in the poorest areas of the cities and for this reason they primarily serve the low income people.

The AMC seeks to provide farmers with an assured market at the best possible prices. Three types of purchases are now in operation:

- (1) contract at stipulated prices;
- (2) purchases at absolute guaranteed prices;
- (3) open market purchases based on minimum guaranteed prices.

The guaranteed price for 35 crops now under this system has

Note - The administrative budget of AMC is approximately J\$6.5 million. That compares with estimated annual purchases of \$10 million and sales of J\$12.0 million.

.....established

*Clarify*

established a floor price that has gone a long way toward making the country self-sufficient in these crops. As can be expected surpluses have accrued with some crops which accentuates the need for storage and processing facilities. The AMC operates a factory that processes carrots, beets and tomatoes.

The AMC has apparently gone a long way toward stabilizing the market for farmers. The Government subsidized its losses in 1973 at the rate of \$1.75 million and has budgeted J\$3,740,000 during 1975/76 from general tax revenues. This acts as a subsidy to the farmers paid for by more affluent consumers. Only part of this sum reaches the farmer however because of the inefficiencies in the system.

The more significant problems of the AMC include:

1. the lack of good farm to market or feeder roads in parts of the country;
2. insufficient refrigerated trucks to move the produce
3. the problems of storage and space for preparation and packaging of the produce.
4. the inadequacy of market intelligence;
5. no acreage control of the various crops to prevent under or over supply;
6. the lack of cold storage, freezing and processing facilities

Despite the problems mentioned above the marketing system as described does not offer major production constraints to the small farmer. Problems do exist and many examples could be cited.

It is reported for example a considerable percentage of bananas received at the collection points by the Banana Board are rejected because they are bruised in transporting and are not suitable for export.

A UNDP/FAO study of the Pindars River and Two Meetings watersheds stated "Farmers in both watersheds expressed generally negative feelings about the pricing and buying policy of the AMC. Several mentioned having no alternative outlet other than to sell to higglers in the area. It should be noted in this respect that the higglers are likely to be wives of other farmers in the district."

It was reported that the higgler system, especially when products in the market place were scarce, created as much as 400 to 600 percent increase in price from farmer to consumer. It was also reported that at times certain products were scarce or expensive in the market place in Kingston but abundant and cheap in the country.

The "Green....."

The "Green Paper" on Agricultural Development Strategy recommended - "the whole marketing structure needs to be reviewed and modified."

#### F. Institutional Constraints

The Ministry of Agriculture is the major institution serving the farmer. The failure of this Ministry to effectively reach the small farmers of Jamaica is a major constraint to progress in the agricultural sector. Reorganization of the Ministry is presently contemplated as recommended by a task force from within and outside the Ministry of Agriculture.\* This task force made 217 specific recommendations that would cost (excepting increases in salaries) J\$1,580,000 the first year, J\$1,315,000 the second year and J\$810,000<sup>3rd year</sup>. The changes would be time phased over that period and would attempt to alleviate problems some of which are mentioned below:

1. Too many important areas of agricultural, directly affecting both production and rural development are the responsibilities of statutory agencies operating independent of the Ministry. They report directly to the Minister rather than the Permanent Secretary who is the Senior Civil employee and the Coordinator of the Ministry of Agriculture. For example the responsibility of planning, development, and control of livestock, rice, banana and coffee development are the responsibilities of agencies that report directly to the Minister.
2. The Ministry of Agriculture is organized on a project basis and these projects must be coordinated at the Ministry level by senior officers.
3. Since no single officer has the responsibility for carrying out programmes there is no accountability for success or failure.
4. there is a very heavy concentration of Senior Officers, Managers and most of the staff with authority in Kingston.
5. The lack of capable people at the managerial and technical level for assignment on an island wide basis to each project.
6. Extremely high costs in travel, equipment and accommodations.
7. No standard policy in force regarding the allocation of land owned or acquired by Government although the Ministry is responsible for central planning.

\* Ministry of Agriculture, Review of Organization, Management Services Division, Ministry of the Public Service, November, 1975.

8. Failure to have unified planning of programmes.
9. Insufficient staff development to meet requirements and the lack of definite manpower planning and career development programmes.
10. The lack of a separate review and evaluation procedure of projects and programmes.
11. A proliferation of extension advice to small farmers from various agencies but the failure to develop meaningful farm plans. If some farmers received too much assistance many received none because the ratio of extension staff in the Ministry to farmers was 1 : 1800.
12. Failure of the technological transfer to benefit small farmers because of ineffective communication techniques of the extension staff.
13. Too many agencies were dispensing agricultural credit and this makes it difficult to use credit as a tool to induce change or influence systematic change.
14. Since irrigation and drainage are not the responsibility of the Ministry of Agriculture effective development in these areas is hindered.

The proposed structural changes recommended by the report would bring about three basic changes.

1. Planning, data storage and information, and control and evaluation to be centralized at the Headquarters in Kingston.
2. The implementation of agricultural production and rural development to be located in three regional centres each with a Regional Director responsible for all Ministry activities in that geographic area.
3. The extension and research functions of the Statutory Bodies (except sugar) would be assumed by the Ministry of Agriculture.

Other changes would decentralize agricultural research and locate research worker on regional research stations. In addition extension specialists would be located at the stations. In this way it is hoped to develop a problem oriented rather than a theoretical research programme.

Appendix 2 - 3 indicates the proposed reorganization staffing pattern of the Ministry of Agriculture and appendix 2 - 4 shows the proposed regional organization staffing pattern.

The inequities of the present system under which the more than 3,000 staff members of the Ministry of Agriculture work should be partially alleviated when the proposed changes have been put into practice. Some of the proposed changes however, will not take place since it has been decided that the Land Development Organization and the Forestry Department will be exempted from the plan. It is quite likely that other exceptions will be made.

At the present time the lack of an overall effective programme in agriculture must be considered a constraint to the improvement of the life of the rural poor. The decentralization to regional centres and the establishment of a coordinated extension service will allow for programme development in contrast to the present uncoordinated approach to help the poor farmers.

It should be mentioned that some projects such as the Land Lease settlement projects have been very effective in assisting small segments of the target group but with high capital costs and with heavy input of technical assistance.

The Educational system and Agricultural Education in particular are real constraints to the development of the rural poor. It is quite apparent that a large part of the rural poor are functional illiterates. It is reported that in addition to 40% of the adult rural population that a high proportion of the children finishing their primary education in rural schools have problems in reading and writing.

Agricultural education is included in the school curriculum and the shortage of teachers in this area was reported to be a problem. In 1972/73 the need was reported to be 224 and the shortfall 140. The AID loan for education should help alleviate the situation but lack of education of the target group will continue to be a problem for extension workers, credit specialists and others working with the poor farmer.

The shortage of trained people to work with all phases of agricultural development is a serious problem. The "Economic and Social Survey - 1975" reported that there were a total of 57 students enrolled in the three-year post-secondary courses of the Jamaica School of Agriculture. This number had increased to 130 in 1976.

..... However the

However the difficult job of reaching the rural poor requires additional training and experience before technicians at this level can be effective communicators who can influence the poor farmer. Efforts are also being made through the USAID loan to increase and improve vocational agricultural training at the secondary level.

The general health of the population is a positive factor in promoting the development of the rural sector in general and the poor farmer in particular. There are no major infectious diseases that create a problem. A low nutritional level and the lack of animal protein is an inhibiting factor as to the amount of work that can be performed by some of the poorest of the rural poor.

F. Relative Importance of Constraints

The constraints factor affecting the target group can be divided into three basic categories :

- (1) Natural constraints dealing with climate , topography and soil type. In this area could be included the lack of land and demographic pressure.
- (2) Inherent constraints that can be only changed and modified over a long period of time. These constraints fall in the category of illiteracy, educational level, social customs and general attitudes of the rural poor.
- (3) Policy constraints would include all those measures that could be alleviated by a change in governmental structure policy or emphasis as related to the target group.

of the natural constraints however the storage of water can be alleviated by irrigation and water conservation practices. The poor soil can be improved by soil conservation and fertility building programmes.

The category of constraints listed above as inherent deal with the people factors that can only be eliminated and modified over a long period. Such constraints as illiteracy can be combatted through an effective educational programme and demographic pressure can be reduced by a population control programme.

The policy constraints as discussed above are not only critically important but can be addressed in a positive manner.

First priority obviously is the reorganization of the Ministry of Agriculture. Within the reorganization top priority should be given to developing a single viable coordinated extension system properly equipped

and with.....

and with people trained to work with the rural poor. Almost of equal importance is the reorganization of research activities that would include decentralization and emphasis on problem solving rather than theoretical research. The credit programme and the marketing system waste scarce resources but are operating in a manner that does not create a major inhibiting constraint that would prevent an effective programme from reaching the rural poor.

However all these constraints are interrelated and a small farmer development strategy must be based upon a coordinated approach. The programme approach designed to combat all aspects of the constraints that are preventing the development of the rural poor should be initiated. A single programme with the coordinated efforts of all aspects of the public and private sector should replace the present project approach. The importance of the interrelationship of factors has to be emphasized in any constraint analysis. For example, a project in soil conservation designed to combat a problem with erosion control and soil fertility should include research, extension, credit and marketing in a coordinated programme.

Programme implementation should include activities not only related to the GOJ official agencies but must involve the only organization that represents all of the poor farmers - The Jamaica Agricultural Society (JAS).

### III. SMALL FARMER DEVELOPMENT STRATEGY

#### A. GOJ Agricultural Sector Goals, Objectives, Policies and Programmes Addressing Constraints

##### 1. GOJ Sectoral Goals and Objectives

As developed in the Ministry of Agriculture's 1973 Green Paper on Agricultural Development, the Government's interest in the rural/agricultural sector can be summarized in the form of five major goals:

- (a) increase rural incomes, and improve rural amenities and social infrastructure as a basis for raising the standard of living of the rural population;
- (b) ensure that all agricultural land is retained and utilized in as an efficient a manner as possible;
- (c) create agro-industrial and small enterprise opportunities in rural areas to reduce the unequal distribution of capital and economic activity between rural and urban areas;
- (d) produce as much of the food and raw materials as is economically feasible to meet domestic food and nutrient requirements and increase exports of traditional crops and develop new crop exports; and
- (e) structure agricultural production in a manner which will reverse the growing reliance on imported agricultural commodities.

##### 2. GOJ Policies and Programmes

Current GOJ policies and programmes that address the constraints confronting the poor small farmer target group are as follows:

- (a) Unequitable Distribution of Land - the GOJ recognizes the need for a broad scale land reform and is pursuing the following policies:
  - (i) accelerate and extend the settlement of landless farmers and labourers on suitable agricultural land
  - (ii) take necessary courses of action to ensure a reduction in the quantity of idle agricultural land

(iii).....

- (iii) utilize a system of lease-hold rather than freehold tenure to be long term in nature on all lands obtained by the Government and
- (iv) when appropriate utilize the concept of co-operative farming on settlement lands.

The Principal GOJ programme in land reform is Project Land Lease which was started in 1973. Currently Project Land Lease consists of three distinct categories of activity:

Category I - under this category supplemental land is provided to farmers within a two mile distance from their homes. The land is leased to the farmer for a period of 5 years and subject to renewal. Most parcels leased to farmers under this category are on lands leased by the government from private landowners for periods of 5 to 10 years. The initial target set for this category of the Project Land Lease programme was to provide 10,000 farmers land by the end of 1974. By August of 1975, 13,600 farmers had received approximately 23,300 acres of arable lands. By September of 1976 a total of 31,074 acres of arable lands were made available to 17,313 farmers. This land is being utilized primarily for the production of domestically consumed food crops.

Category II - farmers assisted by this category represent those with farms that are too small to provide a reasonable income (economically unviable). Under this category the farmers are provided supplemental parcels of government owned land (averaging 2 acres per parcel) on a lease-hold arrangement for 49 years. The purpose of this category of activity is to create a permanent type of tenure arrangement through the establishment or creation of economically viable size holdings. As of September 1976, 4,384 small farmers had 7,200 acres of land made available to them.

Category III - this part of the PLL programme is to provide landless farmers and workers with economically viable land holdings and necessary services. In addition to settling these new farmers under 49 years lease-hold arrangements, the Government provides a variety of infrastructure facilities including roads, housing, water supply and electricity. As of September 1976 about 886 farmers had been placed on 3,984 acres of land.

(b) Limited Availability of Water - the GOJ's policies on the provision of water for agricultural purposes throughout the year consist of :

- (i) rationalize the existing irrigation authorities and enforce economical use of water, with emphasis on reducing wastage on farms and in irrigation systems' design and construction

(ii) development of new.....

- (ii) development of new irrigation projects which would impact on the largest number of farmers producing food crops for domestic consumption and export and
- (iii) undertake research on types of crops and crop mixes that will yield the greatest returns on the lands affected by the new irrigation projects.

The GOJ, with the assistance of FAO/UNDP, has completed a number of intensive studies on water resource utilization and development. As a result of these studies, approximately 45,000 acres of land have been identified as suitable for irrigation and specific plans continue to be completed for project development. In the Pedro Plains river basin approximately 900 acres were brought under irrigation during the 1968 -73 period, and an additional 1,100 acres have been irrigated since 1974. Within the next five years 4,000 additional acres will be irrigated. The other area where land has been recently irrigated is the Martha Brae Valley. Out of an estimated 8,600 acres of irrigable land divided into 11 zones, approximately 2,000 acres located in four zones are being placed into irrigation under a programme that started in 1975.

(c) Inaccessibility to Credit - although agricultural credit is available from a variety of institutions, each lending under different conditions, the greater majority of this credit is not accessible to the poor small farmer whose land holdings usually consist of less than 5 acres. Current credit operations consist of the Agricultural Credit Board, Jamaica Development Bank, Self Supporting Farmers' Development Programme and Project Land Lease. The Agricultural Credit Board is a government department which makes loans directly to individual farmers as well as to Agricultural Loan Societies (Peoples Co-operative Banks). Recipients of credit from the ACB are medium and large farmers, fishermen and cooperatives, as well as agribusinesses. Credit is provided for all types of farm financing activities and for the purchase and equipping of fishing vessels.

From its inception, the Jamaica Development Bank (JDB) has been involved in a programme of supervised commercial agricultural credit for the provision of medium and long term loans to commercial agricultural development enterprises. The Commercial Farmers Loan Programme provides a minimum loan of \$15,000 to any technically feasible and economically viable commercial enterprise engaged in production or agribusiness activities.

The Self Supporting Farmers' Development Programme (SSFDP) was established under the Ministry of Rural Land Development in 1969. Presently the SSFDP is administered by the JDB. Basically, the SSFDP provides credit to farmers with holdings between 5 and 25 acres, although farms up to 100 acres of poor lands or under 5 acres of highly fertile land are also eligible. Beneficiaries of the SSFDP must earn their income primarily from agricultural or livestock activities and must have less than \$25,000 of gross farm assets. The minimum size loan is \$1,000 with the maximum being \$15,000.

Project Land Lease made credit-in-kind available to all farmers participating in a PLL programme. Credit was usually provided in the form of production inputs, such as seed, fertilizer and pesticide; implements for land preparation and housing materials. Except for housing materials for which 25 years amortization periods was allowed, the PLL credit-in-kind was short term with repayment schedules coordinated with crop cycles. It was announced in October of 1976 that future financing of Land Lease farms would come from JDB through a programme similar to the SSFDP.

(d) Soil Erosion - as part of the GOJ's policies concerning efficient use of existing lands in order to obtain increased productivity and production levels, the Government is actively pursuing a soil conservation programme which will provide immediate benefits to the poor small farmers located on the site and long run benefits to both less well off and more prosperous farm families located off the site. Currently the GOJ is managing several pilot projects located in different watershed areas of the country in order to test out various soil conservation practices and technologies such as terracing, contour farming, intercropping, etc. Since the watershed areas are primarily populated by poor small farmers, the results of these pilot projects and the lessons learned are expected to be extended to the numerous watershed areas of the country.

(e) Inadequate Rural Infrastructure - the GOJ approach to the development of the rural sector is a dual effort consisting of activities to increase productivity, production and incomes, and the improvement of rural infrastructure as a necessary condition for sustained long run improvement in the standard of living for the rural population. Current GOJ supported rural infrastructure programmes include:

Rural Feeder Roads - the Rural Feeder Roads project started in 1972 with AID financing involves the construction and upgrading of approximately 200 miles of roads in rural farming areas. The programme has been virtually completed by October 1976.

Rural Electrification - In 1966 a rural electrification project for villages over 500 people was initiated with World Bank financing as the first stage of a comprehensive and integrated programme to provide electricity to rural farm communities in Jamaica. With the desire to continue implementation of later stages of the project, the GOJ is negotiating funding from the Inter-American Development Bank.

Housing.....

Housing - In 1974 the GOJ placed increased emphasis on low income housing construction through its Sites and Services Schemes project. The Sites and Services Schemes project is working toward the completion of 6,000 units which will provide housing for approximately 36,000 low income people in rural areas. An important element in the Sites and Services Schemes project is the fact that the construction of community facilities is provided at each housing site. These community facilities include basic schools, day care centres, health centres, market sheds, trade training centres, small industries and police posts.

Incentives - The GOJ has had a programme of subsidies to farmers between 1955 and 1975, J\$36 million was disbursed. See Appendix 3 - 1 for information.

#### Private Sector Organizations and Programmes

##### Jamaica Agricultural Society

This organization was established in 1895 to help the small farmers of Jamaica. It is a membership organization with a three tiered structure. There are 984 branches scattered through out the island and it is reported that these branches represent a total of 80,000 farmers. Only members who have paid their yearly dues of J\$.50 are actually considered as financial members. There were 23,000 people in this category last year and through September 1976 there were 19,381 who had paid their dues.'

The branch offices are represented at the parish level. It is a democratic type of an organization with officers at all levels being elected each year. There are only 300 paid employees of all types in the total organization. Most of the activities are carried out by the members themselves on a voluntary basis. There are several distinct ways whereby the JAS assists its membership including the following:

(1) Representation activities - During the year April 1975 - March 1976 approximately 850 resolutions were received from parish associations and Branches that were forwarded to the relevant authorities. The priority needs were reported to be.

- a. roads
- b. water supply
- c. housing
- d. land
- e. electricity

(2) Educational activities - The branches organize their membership so they may obtain assistance from the Agricultural Extension Service of the Ministry of Agriculture and from the various commodity boards. These agents give educational talks at the monthly meetings and make organized farm visits and tours.

In general they work closely with these agencies to bring technological information to their members.

(3) Marketing - Some of the Branches have organized co-operatives that help to concentrate and market farm produce. In other instances the JAS provides marketing assistance but not under the formality of a cooperative arrangement. The JAS receives pimento (All Spice) from their members throughout the country and sells it to the government which does the exporting. There is a Coffee Growers Federation of the JAS that markets coffee for its Members. The JAS is cooperating with the Jamaica Industrial Development Corporation to increase the production and marketing of cassava for industrial purposes.

The JAS in cooperation with the Agricultural Marketing Corporation (AMC) established in the fall of 1974 a project called JAS/AMC Grading and Packaging. Under this project farmers in various localities have been trained and organized to concentrate their domestic food crops to facilitate marketing by AMC. As of May 1976, there were 66 trained groups and 24 were in operation. It was reported that 1,824,661 lbs. of produce had been handled and that \$273,359 had been paid out to the farmers.\* This project enables AMC to get better quality produce, the packaging provides the farmer with some labour benefit and a better price for their produce. It eliminates the higgler who often goes directly to the farms and harvest certain crops.

(4) Cattle Insurance Cooperative Society - This JAS Co-operative Society was established in 1953 to assist Members in financing cattle purchases. The Society has a line of credit with the Agricultural Credit Board and makes loans to a maximum of \$4,000 to cover the purchase of up to 10 dairy animals. It provides an Insurance scheme where by animals purchased through the Cooperative are covered up to 2/3 the purchase price in case of death. There are 2,252 members.

(5) Promotional Activities - The JAS sponsors one or two agricultural and livestock exhibitions each year as well as a National Champion Farmer Competition and a National Farm Queen Competition.

The JAS is a positive force for agricultural development in the country and provides an effective vehicle to reach the small farmers. This fact is recognized by the Government which provides a subsidy through the Ministry of Agriculture budget to help pay some of the operating costs.

\* Annual Report - JAS April 1975 - March 1976.

C. Other Donor Programs

Assistance from other bilateral and multilateral donors in the Agriculture sector, has been varied, both in sector sub-areas and resource inputs. Projects presently on-going are:

1. Organization: Inter American Development Bank

Project Title and Objectives: Self-supporting Farmers Development program. This loan program was designed to help full time farmers with 5 - 25 acres and with a maximum capital worth of \$25,000. A total of \$19,713,992 had been disbursed as of June 30, 1976. On that same date the Jamaica Development Bank which is disbursing the funds for the GOJ had \$1.6 million pending reimbursement from IAB on the third tranche of the loan program.

2. Organization: UNDP/WHO/PAHO

Project Title and Objectives: "Animal Health"  
(a) to undertake studies to determine immediate requirements of various aspects of animal health and to assist in preparing detailed long-range programs and (b) study animal fertility, tick and screwworm eradication and conduct meat inspections. This is a 3½ year project, which terminates in December, 1979.

3. Organizations: UNDP/FAO

Project Title and Objectives: "Irrigation Development"  
To assess the agricultural potential of the whole island and to identify irrigation projects for the development of suitable lands. This is a four year project, which terminates in November 1976.

4. UNDP/FAO: "Forestry Development and Watershed Management, Phase III"

The objective of this project is to establish sawnwood and other forest resource and related industries in Jamaica which will contribute substantially to increased income, employment and import substitution. This is a 1½ year project which will terminate in December 1976.

5. UNDP/FAO: "Commercial Fisheries Training"

The objective of this project is essentially to train Captains, Engineers and Fishermen for commercial fishing. This three year endeavor will end in August 1977.

6. Organization: OAS "Rice Industry Development"

This project provides assistance to the Agricultural Development Corporation (ADC) in rice cultivation, paddy preparation and soils. It is a brief one year project, which ends in January 1977.

7. Organization: United Kingdom, Overseas Development Agency (UKODA)

Project: "Coconut Lethal Yellowing Disease"

This is a six year, 1972 - 1978, research project to confirm the presence of mycoplasma - like organism in disease trees and apparent absence in non-diseased trees and to identify the insect vector, involved.

8. UK/ODA - "Banana Agronomy Research Project"

This is a three year research project ending in 1976, which involves experimental studies on yields of tetraploid bananas grown under a variety of conditions.

9. UK/ODA - "Barton Isle Project"

This is a modest, one advisor, project to establish a Cooperative Training Center, directed toward cultivating fruits and vegetables for export. This three year project will end in January, 1978.

10. Organization: CIDA: "Assistance to the Agricultural Development Corporation, development of pig buildings and pig production"

The purpose of this project is to develop a technologically sound pig industry at the level of farm production and marketing. This is a three year project, which ends in 1978.

11. Organization: FAO/IDB - "Agricultural Research"

A reconnaissance mission was sent to Jamaica in August 1976, to identify technical assistance needs in rationalizing the organization and planning of Agricultural research.

12. Organization: FAO/IDB - is currently (October 1976) conducting a macro feasibility study on the entire fisheries industry, both inland and marine. The objective is to identify for the GOJ, various projects and alternatives in further development of the fishing industry.

Additionally, Cuba is providing assistance in the construction of several micro-dams for irrigation and Israel provides several fellowships for rural community training in Israel.

There are several agricultural projects currently in the application or feasibility stage of development. These are:

1. Organization: IBRD - "Rural Development I"

This project, with a Bank input of up to \$15 million, is intended to provide assistance to small farmers through land settlement and related infrastructure works and construction of markets, water supply, schemes and rural feeder road. The expected GOJ contribution to this proposed project is approximately \$16 million.

2. Organization: IBRD - "Agricultural Credit III"

This proposed loan is intended to provide assistance to the Jamaica Development Bank (JDB) to finance on-farm improvements for coconut, citrus, livestock and for Agro-industries.

The IBRD's contribution to this project would be up to \$10 million, with a remaining \$12 million being provided by government. As of July 1976, this project was in the appraisal stage of development.

3. The IDB has conducted a preliminary marketing study of the Agricultural sector. The reconnaissance mission report identified a project to cost \$10 million with a \$3 million foreign exchange component. The IDB will furnish 27 man months of technical assistance over a six month period to develop the

final loan proposal. At this time they are considering better marketing facilities both in major cities and at the Parish level. They have recommended a general reorganization of the Agricultural Marketing Corporation.

4. Organization: IDB - "Dairy Cattle Program"

This modest proposed technical assistance project, is at the prefeasibility stage and has its objective, the identification of areas (suitable for investments in dairy cattle production) looking toward an expansion of the industry. The total resource input, IDB and GOJ, is \$147,000.

5. Organization: UNDP/FAO - Title: "Soil Conservation and Watershed Management"

During the UNDP program cycle, 1978 - 1981, the FAO is planning to initiate a project which will assist the GOJ in: (a) planning an initial implementation of a national program of soil conservation and watershed management. (b) Training of all levels of departmental staff and farmers in soil conservation work and (c) identifying and preparing soil conservation projects for external financing. The projected UNDP/FAO input to the project is \$578,000 with the GOJ contribution not yet determined.

6. The EEC is considering possible assistance of \$2 - 3 million, in construction of mini-dams. They are also considering a program to improve banana quality.

7. The Federal Republic of Germany has under consideration, assistance in the construction of new and improvement of existing fishing port facilities.

SECTOR ASSESSMENT

D. AID ASSISTANCE STRATEGY - SMALL FARMER DEVELOPMENT

USAID has for some years recommended in the DAP and other policy papers that support be given to the lagging agricultural sector of Jamaica. Outside of bauxite/alumina and tourism which are subject to fluctuating external influences, agriculture offers the best resource base for sustained and viable economic development.

In recent years the GOJ has recognized the necessity of affording greater priority to development of the agricultural sector based on both economic and social considerations. Some programs which the current government have initiated include Land Lease and Food-farms which are described elsewhere in this Assessment.

To date, USAID's resource inputs to sectoral projects have been modest, but appropriate to needs. USAID contribution was essentially dictated by policy considerations as well as resource limitations. USAID's Sector Assistance has been structured to provide assistance to Fisheries, Forestry Development, Rural Road construction and some training assistance being provided to Jamaican Development Bank (JDB) officials dealing in small farmer credit. The community and primary education programs under the Rural Education Sector Loan, will also have a major and positive impact on the development of the agriculture sector.

USAID/Jamaica feels it appropriate at this time to respond to the request of the GOJ to assist the MOA in reviving the agricultural sector. The Mission feels that technical change in agriculture is necessary to a broad based plan for overall development of the economic potential of Jamaica.

While the amount of USAID resource inputs to support GOJ initiatives in the sector is perforce limited, when combined with other donor and GOJ resources the impact should be substantial; this being due to the elasticity of employment in this labor intensive sector. Recent agriculture employment elasticity data suggests that labor-intensive projects in the sector can successfully combine growth with employment creation.

The problem of unemployment and underemployment of the rural poor in Jamaica and the urban poor as well, is an important factor in slowing economic progress. The overall real unemployment rate estimated to be 20 - 25%, must be reduced. Since Agriculture is the number one employer of people in the country, the Mission feels that our strategy should be arrived at by developing labor intensive employment opportunities in agriculture and agri-business. An effort must be made to create greater employ-

ment opportunities in the rural areas coupled with a more desirable environmental situation. This will help stem the rural to urban migration of the young more productive workers that results in the rural population remaining constant and an inordinate increase in urban unemployment and underemployment.

It is felt, because of the dominant cost of food in the budget of both the rural and urban poor, that technological changes to produce more food per unit of land and unit of labor will benefit the population in general by reducing the cost of essential food. We also are interested in developing projects that will provide inputs which have a multiplier effect and have application island wide, since the problems are extensive and the resources limited.

A USAID program in agriculture development would be aimed at helping the poor small farmer and would complement the efforts being made by IBRD, IDB, UNDP, FAO and others, and build upon AID's experience in related fields. The Ministry of Agriculture is in the throes of a major reorganization and decentralization of agricultural services. Any USAID program on agriculture would, by necessity, be involved in assisting in this task possibly by using the project approach as a tool for implementation. We believe that IBRD with its much greater resources ought also to be engaged in assisting the Ministry of Agriculture in its reorganization. We feel that within the reorganization of the MA, that improvements in the credit system, the marketing system, and within the Ministry itself, the decentralization of extension and research are essential to any agricultural improvement program aimed at the poor small farmers. The larger more prosperous farmers even within the present system, can survive, but the small farmer is virtually eliminated from the available technological benefits because of the difficulties in reaching him.

#### OVERALL PROGRAM EFFORT:

The Mission currently has an approved PID that would employ a integrated project approach to a development effort especially designed to reach the small poor farmer of a specific project area. It is felt that with this approach, the Mission can zero in upon the known problems and discover other constraints that have to be resolved if our goal of improving the life of the poor farmer is to be achieved. The present project now contemplates an expenditure of roughly \$20 million with USAID lending the GOJ approximately \$8 million of the project cost.

It is expected that as this project develops, unanticipated events may occur, thus a certain amount of flexibility will have to be built into the project design and implementation plan.

As the project is implemented and results evaluated, it may be appropriate to consider further financial assistance to take full advantage of the expertise and approaches developed for extension beyond the project area to encompass the country as a whole.

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## UTILIZATION OF LAND IN FARMS BY LAND AUTHORITIES—1968/9

## ALL FARMS

LAND AUTHORITIES	Total Acreage	Pure Stand	Mixed Stand	Food Forest	GRASSLAND			Fallow	RUINATE			Woodland	Other Land
					Total	Improved	Natural		Total	Pasture	Other		
YALLAH'S VALLEY AREA	51,692	9,717	11,123	3,997	6,278	993	5,230	2,387	3,136	2,834	5,272	6,796	2,438
MORANT BAY "	94,624	20,648	20,963	1,113	9,339	2,425	6,913	747	17,231	2,569	14,721	9,879	4,654
PORT ANTONIO "	75,656	16,493	24,145	683	4,394	1,119	3,775	799	15,151	7,770	7,381	3,910	3,575
PORT MARIA "	112,239	39,655	31,904	1,649	12,810	4,139	9,689	1,533	15,397	11,001	4,396	3,469	5,112
CLAREMONT "	130,387	18,421	21,270	802	49,248	26,920	22,328	3,731	17,976	9,722	8,254	11,594	12,375
CHRISTIANA "	63,239	20,250	10,383	726	9,093	3,474	5,619	3,739	5,766	2,597	3,189	3,277	3,976
FALMOUTH "	100,752	21,991	3,349	916	25,969	11,819	18,159	1,015	11,297	4,950	6,337	24,761	7,464
CAMBRIDGE "	147,766	22,949	10,499	3,684	45,596	22,720	22,876	3,236	26,632	17,631	9,001	25,899	9,370
GRANGE HILL "	127,653	40,352	4,201	1,360	32,856	15,701	17,155	2,340	14,231	8,712	5,519	21,827	10,486
SANTA CRUZ "	170,140	18,992	19,226	1,958	60,397	24,012	26,385	2,624	29,513	19,079	10,434	26,995	10,525
MANDEVILLE "	89,162	9,469	7,726	1,154	29,965	10,202	9,263	2,263	17,011	10,091	6,920	7,241	15,242
MAY PEN "	167,913	65,251	15,089	1,333	16,280	6,611	9,669	5,256	16,963	5,801	13,162	22,173	22,963
LINSTLAD "	157,974	43,233	29,099	4,749	23,662	18,814	4,818	4,307	24,339	6,136	18,143	24,194	13,529
ALL LAND AUTHORITIES	1,499,188	357,412	200,478	23,490	321,457	159,537	161,929	34,377	221,613	198,944	112,069	299,652	129,799

UTILIZATION OF LAND IN FARMS BY LAND AUTHORITIES—1958/9

Appendix 1-2

FARMS OF UNDER 1 ACRE.

LAND AUTHORITIES	Total Acreage	Pure Stand	Mixed Stand	Food Forest	GRASSLAND			Fallow	RUINATE			Woodland	Other Land
					Total	Improved	Natural		Total	Pasture	Other		
YALLAHS VALLEY AREA	1,533	232	625	290	6	—	6	55	21	3	18	2	219
MORANT BAY "	1,115	160	606	97	6	1	5	3	17	2	15	1	235
PORT ANTONIO "	860	99	526	32	5	1	4	6	19	4	15	1	162
PORT MARIA "	2,035	396	619	42	7	—	7	7	12	4	8	2	150
CLAREMONT "	1,393	342	602	89	15	1	14	33	18	6	12	3	195
CHRISTIANA "	2,005	1,126	543	25	10	—	10	37	11	4	7	2	151
FALMOUTH "	977	318	302	65	10	1	9	9	23	5	18	1	46
CAMBRIDGE "	2,911	940	839	310	37	5	32	47	140	106	34	57	50
GRANGE HILL "	2,877	1,033	786	154	53	2	56	33	124	12	112	92	97
SANTA CRUZ "	1,780	236	949	127	33	2	31	13	25	22	3	—	97
MANDEVILLE "	1,033	288	384	79	12	2	10	11	17	9	8	2	40
MAY PEN "	2,215	690	798	36	37	2	35	55	42	21	27	2	39
LINSTEAD "	2,002	464	679	190	34	1	33	134	45	25	20	2	454
ALL LAND AUTHORITIES	22,736	6,924	8,249	1,543	279	18	252	448	520	223	297	189	4,072

UTILIZATION OF LAND IN FARMS BY LAND AUTHORITIES—1968/9

Appendix 1-3

FARMS OF 1 TO UNDER 5 ACRES

LAND AUTHORITIES	Total Acreage	Pure Stand	Mixed Stand	Food Forest	GRASSLAND			Fallow	RUINATE			Woodland	Other
					Total	Improved	Natural		Total	Pasture	Other		
YALLAHS VALLEY AREA	13,973	3,245	4,953	1,819	375	21	354	1,068	1,179	190	989	228	1,065
MORANT BAY "	10,482	2,288	5,779	361	160	12	148	96	1,118	164	954	123	537
PORT ANTONIO "	10,705	2,347	5,718	239	177	3	169	140	958	184	774	215	920
PORT MARIA "	19,075	8,464	7,756	343	464	22	442	258	696	300	395	61	1,033
CLAREMONT "	13,813	3,612	4,814	359	1,266	158	1,045	1,003	1,231	449	782	434	1,158
CHRISTIANA "	19,725	9,564	5,081	225	503	43	460	1,360	975	459	516	182	1,827
FALMOUTH "	6,964	3,362	1,296	339	349	70	279	210	604	248	356	126	678
CAMBRIDGE "	20,573	6,436	4,325	1,026	1,831	139	1,692	819	3,195	2,336	859	232	2,109
GRANGE HILL "	12,490	5,472	2,138	608	1,402	79	1,323	619	821	451	370	87	1,343
SANTA CRUZ "	22,109	2,825	8,830	892	3,076	331	2,745	691	2,721	1,559	1,162	157	2,918
MANDEVILLE "	12,698	3,485	3,469	483	992	167	825	563	2,123	1,494	719	93	1,400
MAY PEN "	22,767	8,871	7,051	597	1,025	60	965	1,494	2,110	893	1,397	233	1,466
LINSTEAD "	21,205	6,434	8,397	1,581	541	58	483	1,037	1,424	489	935	175	1,616
ALL LAND AUTHORITIES	206,480	66,405	69,617	9,372	12,101	1,168	10,933	9,383	19,155	9,936	10,119	2,346	18,101

EXTENT OF CROPS CLASSIFIED BY LAND AUTHORITIES—1968/9

Appendix 1-4

ALL FARMS

LAND AUTHORITIES	Total Pure Stand	Sugar Cane	Citrus	Yams	Bananas	Irish Potato	Coconut	Cocoa	Coffee	Other Crops
YALLAHS VALLEY AREA	9,717	388	274	743	891	23	723	176	805	5,663
MORANT BAY "	30,648	11,724	171	49	1,447	12	14,703	219	254	2,010
PORT ANTONIO "	16,433	202	350	218	4,100	31	8,443	270	116	2,763
PORT MARIA "	39,655	5,408	1,900	1,551	13,573	192	7,247	3,093	594	6,097
CLAREMONT "	18,421	2,539	676	3,232	1,311	66	2,741	33	907	6,916
CHRISTIANA "	20,250	1,638	1,010	7,800	5,002	1,104	68	225	731	2,671
FALMOUTH "	21,991	15,165	314	998	1,717	9	1,487	125	111	2,025
CAMBRIDGE "	22,949	6,028	932	2,299	7,988	130	620	205	232	4,515
GRANGE HILL "	40,352	33,079	128	3,220	1,238	4	302	398	31	1,952
SANTA CRUZ "	18,992	9,819	243	602	736	9	82	6	140	7,355
MANDEVILLE "	9,460	44	2,048	1,425	190	193	68	87	437	4,968
MAY PEN "	65,251	45,938	5,883	2,167	1,106	106	291	1,765	1,272	6,723
LINSTEAD "	43,233	25,354	4,229	1,547	2,148	36	2,511	817	1,373	5,219
ALL LAND AUTHORITIES	357,412	157,386	18,188	25,851	41,447	1,920	39,291	7,419	7,003	58,967

EXTENT OF CROPS CLASSIFIED BY LAND AUTHORITIES—1968/9

Appendix 1-5

FARMS OF LESS THAN 1 ACRE

LAND AUTHORITIES	Total Pure Stand	Sugar Cane	Citrus	Yams	Bananas	Irish Potato	Coconut	Cocoa	Coffee	Other Crops
YALLAHS VALLEY AREA	232	2	5	29	16	—	2	1	12	165
MORANT BAY "	160	17	—	3	31	—	12	3	11	83
PORT ANTONIO "	99	1	1	4	59	1	—	3	2	28
PORT MARIA "	996	7	24	38	450	12	13	29	13	410
CLAREMONT "	342	2	7	129	48	1	6	2	26	121
CHRISTIANA "	1,126	27	8	698	153	42	—	3	32	163
FALMOUTH "	318	52	2	73	62	—	3	11	3	112
CAMBRIDGE "	940	42	7	337	210	10	5	4	14	311
GRANGE HILL "	1,033	103	1	621	56	—	2	4	3	243
SANTA CRUZ "	236	20	1	22	15	—	3	—	5	170
MANDEVILLE "	288	—	24	75	6	3	—	2	20	158
MAY PEN "	690	136	70	110	45	3	11	66	43	206
LINSTEAD "	464	39	34	52	74	2	17	16	28	202
ALL LAND AUTHORITIES	6,924	448	184	2,191	1,225	74	74	144	212	2,372

EXTENT OF CROPS CLASSIFIED BY LAND AUTHORITIES—1968/9

Appendix 1-6

FARMS OF 1 TO UNDER 5 ACRES

LAND AUTHORITIES	Total Pure Stand	Sugar Cane	Citrus	Yams	Bananas	Irish Potato	Coconut	Cocoa	Coffee	Other Crops
YALLAHS VALLEY AREA	3,245	70	44	346	335	6	79	43	159	2,133
MORANT BAY "	2,283	510	3	15	305	1	701	57	99	606
PORT ANTONIO "	2,347	12	12	82	1,209	9	373	32	16	602
PORT MARIA "	8,464	190	68	734	3,591	102	510	976	157	2,216
CLAREMONT "	3,612	110	78	1,080	333	32	83	11	225	1,669
CHRISTIANA "	9,564	661	112	4,316	2,197	513	9	71	344	1,241
FALMOUTH "	3,362	1,485	23	548	416	3	101	56	45	625
CAMBRIDGE "	6,436	903	70	1,107	2,612	49	141	61	101	1,387
GRANGE HILL "	5,472	2,280	21	1,646	519	—	39	118	15	834
SANTA CRUZ "	2,825	656	16	338	230	5	26	4	33	1,517
MANDEVILLE "	3,485	13	304	716	51	59	5	37	207	2,693
MAY PEN "	3,871	3,581	600	1,151	459	59	98	779	493	1,669
LINSTEAD "	6,434	1,309	397	757	711	24	337	309	541	2,058
ALL LAND AUTHORITIES	66,405	11,776	1,748	12,836	12,929	862	2,502	2,554	2,465	18,732

## FARMS OF 5 TO UNDER 10 ACRES

LAND AUTHORITIES	Total Pure Stand	Sugar Cane	Citrus	Yams	Bananas	Irish Potato	Coconut	Cocoa	Coffee	Other Crops
YALLAHS VALLEY AREA	2,361	107	35	241	298	9	101	56	139	1,375
MORANT BAY "	2,529	561	6	21	227	10	1,155	79	84	396
PORT ANTONIO "	2,004	8	14	72	857	4	743	46	20	235
PORT MARIA "	5,691	170	78	455	2,138	41	640	835	198	1,136
CLAREMONT "	2,834	154	65	763	219	10	62	6	180	1,375
CHRISTIANA "	4,593	472	128	1,727	1,154	217	11	77	188	619
FALMOUTH "	2,815	1,701	32	238	417	5	126	22	34	240
CAMBRIDGE "	3,797	679	62	477	1,835	30	83	48	53	530
GRANGE HILL "	3,044	1,832	1	523	274	4	25	96	8	291
SANTA CRUZ "	1,871	419	15	121	189	1	14	1	34	1,077
MANDEVILLE "	1,932	17	333	302	15	51	2	26	79	1,106
MAY PEN "	7,200	3,430	687	607	257	31	55	579	442	1,112
LINSTEAD "	4,454	1,248	364	445	383	7	243	247	383	1,174
ALL LAND AUTHORITIES	45,165	10,798	1,820	5,993	8,263	420	3,265	2,118	1,842	10,645

EXTENT OF CROPS CLASSIFIED BY LAND AUTHORITIES—1968/9

Appendix 1-8

FARMS OF 10 TO UNDER 25 ACRES

LAND AUTHORITIES	Total Pure Stand	Sugar Cane	Citrus	Yams	Bananas	Irish Potato	Coconut	Cocoa	Coffee	Other Crops
YALLAHS VALLEY AREA	1,399	45	58	95	147	6	122	64	115	737
MORANT BAY "	2,169	463	3	9	163	1	1,186	48	59	246
PORT ANTONIO "	2,705	12	10	59	943	6	1,402	87	39	160
PORT MARIA "	4,115	184	75	255	1,382	32	871	618	155	543
CLAREMONT "	3,419	195	79	933	284	13	86	5	221	1,593
CHRISTIANA "	2,673	301	120	847	753	113	11	54	115	339
FALMOUTH "	1,712	1,147	20	97	196	1	111	13	21	106
CAMBRIDGE "	3,294	788	64	309	1,189	39	77	54	33	660
GRANGE HILL "	2,616	1,775	12	317	168	—	55	78	2	203
SANTA CRUZ "	1,768	474	16	84	206	1	10	1	39	937
MANDEVILLE "	1,667	10	421	220	19	33	8	13	88	856
MAY PEN "	5,090	2,575	669	258	147	11	73	274	255	738
LINSTEAD "	3,282	1,085	316	235	222	3	282	193	257	669
ALL LAND AUTHORITIES	35,723	9,054	1,863	3,705	5,824	259	4,304	1,502	1,351	7,831

EXTENT OF CROPS CLASSIFIED BY LAND AUTHORITIES—1968/9

Appendix 1-9

FARMS OF 25 TO UNDER 50 ACRES

LAND AUTHORITIES	Total Pure Stand	Sugar Cane	Citrus	Yams	Bananas	Irish Potato	Coconut	Cocoa	Coffee	Other Crops
YALLAHS VALLEY AREA	390	18	30	20	47	3	75	7	27	155
MORANT BAY "	876	115	2	—	23	—	680	9	7	40
PORT ANTONIO "	1,178	—	10	9	337	7	636	13	28	138
PORT MARIA "	1,289	71	53	46	526	3	335	106	23	126
CLAREMONT "	1,088	77	64	245	112	4	66	4	79	437
CHRISTIANA "	580	59	47	141	197	25	8	4	27	72
FALMOUTH "	497	297	16	16	72	—	49	6	7	34
CAMBRIDGE "	912	246	55	61	268	2	43	12	14	191
GRANGE HILL "	1,516	1,159	4	64	60	—	65	41	3	120
SANTA CRUZ "	411	103	13	15	51	—	11	—	6	212
MANDEVILLE "	642	—	205	64	10	14	29	2	23	295
MAY PEN "	1,684	894	269	31	26	2	7	39	24	392
LINSTEAD "	1,069	370	320	35	77	—	55	26	39	146
ALL LAND AUTHORITIES	12,132	3,409	1,088	756	1,826	59	2,060	269	307	2,358

EXTENT OF CROPS CLASSIFIED BY LAND AUTHORITIES—1963/4

Appendix 1-10

FARMS OF 50 TO UNDER 100 ACRES

LAND AUTHORITIES	Total Pure Stand	Sugar Cane	Citrus	Yams	Bananas	Irish Potato	Coconut	Cocoa	Coffee	Other Crops
YALLAHS VALLEY AREA	341	9	64	3	20	5	20	2	23	171
MORANT BAY "	392	73	4	—	41	—	727	10	7	27
PORT ANTONIO "	782	—	10	1	198	4	535	2	1	71
PORT MARIA "	1,555	32	77	6	629	1	588	69	11	151
CLAREMONT "	596	11	41	65	48	3	46	2	43	242
CHRISTIANA "	504	57	31	37	202	82	28	4	19	44
FALMOUTH "	104	209	8	9	68	—	78	3	1	28
CAMBRIDGE "	361	62	8	13	98	—	48	1	12	119
GRANGE HILL "	369	876	1	22	13	—	9	10	—	33
SANTA CRUZ "	349	98	2	8	10	1	7	—	8	215
MANDEVILLE "	286	—	40	27	1	24	3	1	5	185
MAY PEN "	1,114	974	72	7	—	—	3	5	10	43
LINSTEAD "	1,151	430	304	12	104	—	184	21	11	85
ALL LAND AUTHORITIES	9,214	2,831	662	210	1,345	120	2,345	121	161	1,419

EXTENT OF CROPS CLASSIFIED BY LAND AUTHORITIES—1968/9

Appendix 1-11

FARMS OF 100 TO UNDER 200 ACRES

LAND AUTHORITIES	Total Pure Stand	Sugar Cane	Citrus	Yams	Bananas	Irish Potato	Coconut	Cocoa	Coffee	Other Crops
YALLAHS VALLEY AREA	216	—	8	—	2	—	127	3	18	58
MORANT BAY "	1,451	157	—	—	105	—	1,160	12	5	12
PORT ANTONIO "	944	—	—	—	110	—	578	3	1	152
PORT MARIA "	1,488	—	41	—	749	—	611	35	9	43
CLAREMONT "	563	187	69	7	16	2	201	1	6	79
CHRISTIANA "	298	44	115	19	63	32	1	12	6	6
FALMOUTH "	550	436	5	4	63	—	32	—	—	10
CAMBRIDGE "	660	451	45	3	51	—	8	—	—	102
GRANGE HILL "	837	626	7	14	48	—	54	5	—	83
SANTA CRUZ "	373	24	8	7	33	1	7	—	6	287
MANDEVILLE "	248	—	34	13	—	3	—	—	5	193
MAY PEN "	1,402	987	374	1	6	—	6	5	1	22
LINSTEAD "	1,269	767	262	9	20	—	77	5	1	128
ALL LAND AUTHORITIES	10,304	3,679	968	77	1,266	38	2,962	81	58	1,175

EXTENT OF CROPS CLASSIFIED BY LAND AUTHORITIES—1968/9

Appendix 1-12<sup>F</sup>

FARMS OF 200 TO UNDER 500 ACRES

LAND AUTHORITIES	Total Pure Stand	Sugar Cane	Citrus	Yams	Bananas	Irish Potato	Coconut	Cocoa	Coffee	Other Crops
YALLAHS VALLEY AREA	325	—	—	—	6	—	113	—	13	193
MORANT BAY "	2,346	228	—	1	4	—	1,890	—	—	223
PORT ANTONIO "	2,034	169	65	—	176	—	1,044	30	18	531
PORT MARIA "	2,628	236	523	14	873	—	768	122	5	87
CLAREMONT "	503	—	49	4	46	1	122	2	11	268
CHRISTIANA "	686	17	449	15	57	80	—	1	—	67
FALMOUTH "	1,859	1,351	3	9	334	—	37	2	—	133
CAMBRIDGE "	1,182	198	74	—	610	—	41	—	1	258
GRANGE HILL "	2,522	2,340	11	4	46	—	32	39	—	50
SANTA CRUZ "	1,044	897	80	6	—	—	4	—	5	52
MANDEVILLE "	128	4	25	4	1	1	16	1	4	72
MAY PEN "	3,412	2,275	976	2	61	—	34	18	4	42
LINSTEAD "	1,008	440	203	2	48	—	103	—	—	272
ALL LAND AUTHORITIES	19,677	8,155	2,459	61	2,262	82	4,204	215	61	2,178

EXTENT OF CROPS CLASSIFIED BY LAND AUTHORITIES—1968/9

Appendix 1-13

FARMS OF 500 ACRES AND OVER

LAND AUTHORITIES	Total Pure Stand	Sugar Cane	Citrus	Yams	Bananas	Irish Potato	Coconut	Cocoa	Coffee	Other Crops
YALLAHS VALLEY AREA	1,208	137	39	—	20	—	60	—	264	697
MORANT BAY "	17,937	9,660	153	—	345	—	7,192	—	—	387
PORT ANTONIO "	4,400	—	227	—	296	—	2,977	54	—	846
PORT MARIA "	13,429	4,518	961	3	3,325	1	2,911	312	13	1,325
CLAREMONT "	5,549	1,803	224	1	205	—	2,069	—	111	1,136
CHRISTIANA "	226	—	—	—	226	—	—	—	—	—
FALMOUTH "	10,474	8,487	235	4	29	—	950	12	—	757
CAMBRIDGE "	5,457	2,654	547	1	1,095	—	174	25	4	957
GRANGE HILL "	22,349	22,088	70	9	54	—	21	7	—	100
SANTA CRUZ "	10,115	7,128	92	1	2	—	—	—	4	2,888
MANDEVILLE "	784	—	662	3	87	5	5	5	6	11
MAY PEN "	35,878	31,036	2,166	—	114	—	4	—	—	2,508
LINSTEAD "	24,062	19,675	2,029	—	509	—	1,212	—	113	524
ALL LAND AUTHORITIES	151,868	107,236	7,396	22	6,507	6	17,575	415	515	12,196

LIVESTOCK CLASSIFIED BY LAND AUTHORITIES—1968/9

ALL FARMS

LAND AUTHORITIES	TOTAL CATTLE	DAIRY CATTLE	BEEF CATTLE	DUAL AND DRAFT
YALLAIS VALLEY AREA ....	6,759	2,305	3,427	1,027
MORANT BAY " ....	7,545	1,598	5,331	616
PORT ANTONIO " ....	6,577	684	4,581	1,312
PORT MARIA " ....	12,147	1,519	7,126	502
CLAREMONT " ....	32,380	1,402	29,483	1,495
CHRISTIANA " ....	9,061	1,260	5,655	2,166
FALMOUTH " ....	17,809	1,540	15,701	568
CAMBRIDGE " ....	32,311	2,594	26,203	3,514
GRANGE HILL " ....	63,164	1,456	31,784	34,924
SANTA CRUZ " ....	32,703	4,040	27,197	1,471
MANDEVILLE " ....	16,423	2,572	11,105	2,746
MAY PEN " ....	16,626	4,071	7,771	4,784
LINSTEAD " ....	20,180	9,857	8,290	2,033
ALL LAND AUTHORITIES ..	278,710	34,898	183,654	60,158

LIVESTOCK CLASSIFIED BY LAND AUTHORITIES—1968/9LANDLESS FARMS

LAND AUTHORITIES	TOTAL CATTLE	DAIRY CATTLE	BEEF CATTLE	DUAL AND DRAFT
YALLAHS VALLEY AREA ....	23	8	12	3
MORANT BAY " ....	81	2	73	6
PORT ANTONIO " ....	49	32	11	6
FORT MARIA " ....	24	10	7	7
CLAREMONT " ....	34	8	26	—
CHRISTIANA " ....	—	—	—	—
FALMOUTH " ....	13	—	5	8
CAMBRIDGE " ....	115	4	63	43
GRANGE HILL " ....	110	2	54	54
SANTA CRUZ " ....	13	5	8	—
MANDEVILLE " ....	585	—	351	234
MAY PEN " ....	237	27	187	23
LINSTEAD " ....	388	215	165	8
ALL LAND AUTHORITIES	1,672	313	967	392

## LIVESTOCK CLASSIFIED BY LAND AUTHORITIES—1968/9

## FARMS OF LESS THAN 1 ACRE

LAND AUTHORITIES	TOTAL CATTLE	DAIRY CATTLE	BEEF CATTLE	DUAL AND DRAFT
YALLAHS VALLEY AREA ....	382	193	165	24
MORANT BAY " ....	381	71	249	61
PORT ANTONIO " ....	466	18	163	285
PORT MARIA " ....	274	57	107	110
CLAREMONT " ....	291	28	255	8
CHRISTIANA " ....	195	54	81	60
FALMOUTH " ....	218	30	164	15
CAMBRIDGE " ....	1,087	187	547	353
GRANGE HILL " ....	908	79	231	598
SANTA CRUZ " ....	368	37	293	33
MENDEVILLE " ....	273	54	132	87
MAY PEN " ....	1,013	93	755	165
LINSTEAD " ....	1,112	61	425	23
ALL LAND AUTHORITIES ..	6968	1,574	3,572	1,822

LIVESTOCK CLASSIFIED BY LAND AUTHORITIES—1968/9FARMS OF 1 TO UNDER 5 ACRES

LAND AUTHORITIES	TOTAL CATTLE	DAIRY CATTLE	BEEF CATTLE	DUAL AND DRAFT
YALLAHS VALLEY AREA ....	2,538	791	1,070	677
MORANT BAY " ....	2,027	213	1,682	132
PORT ANTONIO " ...	689	122	391	176
PORT MARIA " ....	1,911	310	579	1,022
CLAREMONT " ....	1,894	206	1,487	201
CHRISTIANA " ....	2,093	259	975	859
FALMOUTH " ....	1,319	331	850	68
CAMBRIDGE " ....	4,742	360	3,009	1,373
GRANGE HILL " ....	2,718	220	902	1,596
SANTA CRUZ " ....	3,601	221	2,923	457
MANDEVILLE " ....	2,683	495	1,257	931
MAY PEN " ....	3,179	354	1,532	1,293
LINSTEAD " ....	2,922	1,096	900	926
ALL LAND AUTHORITIES ..	32,316	5,928	17,557	9,731

GROSS DOMESTIC PRODUCT AT FACTOR COST AT CONSTANT (1960) PRICES FOR SPECIFIED PERIODS

Item	\$'000				
	1968	1961	1958	1954	1942
TOTAL G.D.P.	609,335	444,130	385,045	295,428	N.A.
Agriculture, Forestry	55,568	49,462	45,332	42,531	N.A.
Crops	39,698	37,522	42,787	40,819	N.A.
Livestock	13,468	9,464			N.A.
Forestry	2,402	2,476	2,545	1,712	N.A.
Contribution of Agriculture and Forestry to Total G.D.P.	9.1%	11.1%	11.8%	14.4%	N.A.

In contrast to the decrease in acreage, the total number of farms has remained fairly stable. There has however been a gradual reduction in the number of farms of over 5 acres and a corresponding increase in the number of small farms that is, farms under five acres. This pattern may be observed from Table iv.

NUMBER OF FARMS BY SIZE IN CENSUS AND SURVEY YEARS

	1968	1961	1958	1954	1942
Farms	193,400	192,000 <sup>(1)</sup>	199,500	199,000	166,200
Farms under 5 acres	151,700	146,000 <sup>(1)</sup>	141,200	139,000	132,000
Farms 5 acres and over	41,700	46,000	58,300	60,000	34,200

A noteworthy feature of the changing characteristics of number and acreage of farms over the period is that despite the increase and subsequent decrease of total acreage in "active" use, and the decrease in the number of larger farms accompanied by a corresponding increase in the number of smaller farms, the average contribution per farm to the Gross Domestic Product (at Constant Prices) increased over the period.

1) An adjustment has been made in this table only, to the number of Farms in 1961. Throughout the report, consistent with the policy adopted, the actual figures published for each census and survey has been presented. Adjustments to some of these estimates have been made in previous studies and these may, or not may be accepted. The adjustment made here in respect of the number of farms is somewhat arbitrary and has been made to facilitate a more realistic interpretation of the trends displayed over the past three-decades.

## UNEMPLOYED LABOUR FORCE BY INDUSTRY GROUP

INDUSTRY GROUP	1973		1974		1975	
	April	October	April	October	April	October
<b>TOTAL UNEMPLOYED LABOUR FORCE</b>						
Agriculture, Forestry and Fishing	9,400	12,800	11,400	13,200	11,300	12,000
Mining, Quarrying and Refining	1,200	1,100	1,200	1,300	800	1,200
Manufacture	15,200	16,000	17,400	15,300	14,700	16,600
Construction and Installation	13,500	13,000	12,100	10,900	12,900	12,800
Transport, Communications and Public Utilities	3,000	3,400	4,000	3,400	3,900	3,800
Commerce	10,200	11,600	12,000	10,000	10,900	14,500
Public Administration	13,600	14,000	11,700	7,600	14,200	15,900
Other Services	48,600	48,000	47,500	42,900	45,300	50,500
Industry not specified	2,600	2,900	2,600	2,000	1,700	900
<b>TOTAL CLASSIFIABLE UNEMPLOYED LABOUR FORCE</b>	<b>117,300</b>	<b>122,800</b>	<b>119,900</b>	<b>107,600</b>	<b>115,700</b>	<b>128,400</b>
<b>NO PREVIOUS INDUSTRY</b>	<b>55,900</b>	<b>56,800</b>	<b>58,100</b>	<b>58,900</b>	<b>56,200</b>	<b>55,900</b>
<b>TOTAL UNEMPLOYED LABOUR FORCE</b>	<b>173,200</b>	<b>179,600</b>	<b>178,000</b>	<b>166,500</b>	<b>171,900</b>	<b>184,300</b>
<b>MALE UNEMPLOYED LABOUR FORCE</b>						
Agriculture, Forestry and Fishing	4,600	7,100	5,800	7,100	5,500	5,100
Mining, Quarrying and Refining	1,200	1,000	1,000	1,200	600	800
Manufacture	5,800	6,200	7,400	8,600	6,800	6,900
Construction and Installation	12,500	12,700	11,600	10,100	12,000	12,500
Transport, Communications and Public Utilities	2,700	1,900	2,700	2,200	2,500	2,700
Commerce	1,600	2,100	2,300	1,800	2,200	3,000
Public Administration	5,400	5,200	3,800	2,600	5,000	5,900
Other Services	4,500	4,400	2,700	4,200	3,600	4,800
Industry not specified	900	1,900	700	1,100	800	500
<b>MALE CLASSIFIABLE UNEMPLOYED LABOUR FORCE</b>	<b>39,200</b>	<b>42,500</b>	<b>37,900</b>	<b>38,900</b>	<b>39,000</b>	<b>42,200</b>
<b>NO PREVIOUS INDUSTRY</b>	<b>15,000</b>	<b>17,400</b>	<b>16,600</b>	<b>17,100</b>	<b>14,500</b>	<b>14,400</b>
<b>MALE UNEMPLOYED LABOUR FORCE</b>	<b>54,200</b>	<b>59,900</b>	<b>54,500</b>	<b>56,000</b>	<b>53,500</b>	<b>56,600</b>
<b>FEMALE UNEMPLOYED LABOUR FORCE</b>						
Agriculture, Forestry and Fishing	4,800	5,700	5,600	6,100	5,800	6,900
Mining, Quarrying and Refining	-	100	200	100	200	400
Manufacture	9,400	9,800	10,000	7,700	7,000	9,900
Construction and Installation	1,000	300	500	800	500	300
Transport, Communications and Public Utilities	300	1,500	1,300	1,200	1,400	1,100
Commerce	8,600	9,500	9,800	8,200	8,700	11,500
Public Administration	8,200	8,800	7,900	5,000	9,200	10,000
Other Services	44,100	43,600	44,800	38,700	41,700	45,700
Industry not specified	1,700	1,000	1,900	900	900	400
<b>FEMALE CLASSIFIABLE UNEMPLOYED LABOUR FORCE</b>	<b>78,100</b>	<b>80,300</b>	<b>82,000</b>	<b>68,700</b>	<b>76,700</b>	<b>86,200</b>
<b>NO PREVIOUS INDUSTRY</b>	<b>40,900</b>	<b>39,400</b>	<b>41,500</b>	<b>41,800</b>	<b>41,700</b>	<b>41,500</b>
<b>FEMALE UNEMPLOYED LABOUR FORCE</b>	<b>119,000</b>	<b>119,700</b>	<b>123,500</b>	<b>110,500</b>	<b>118,400</b>	<b>127,700</b>

UNEMPLOYMENT RATE<sup>(1)</sup> BY INDUSTRY GROUP

INDUSTRY GROUP	1973		1974		1975	
	April	October	April	October	April	October
	BOTH SEXES					
Agriculture, Forestry and Fishing	4.3	6.2	4.8	5.5	5.0	4.9
Mining, Quarrying and Refining	16.7	12.9	14.3	13.5	9.4	14.5
Manufacture	16.1	16.6	17.6	17.1	16.2	18.6
Construction and Installation	25.4	23.1	23.2	21.4	22.1	22.7
Transport, Communications and Public Utilities	9.8	11.7	12.3	12.1	10.8	10.7
Commerce	10.1	11.9	13.2	11.7	11.8	15.2
Public Administration	16.4	16.0	14.3	8.5	12.4	14.0
Other Services	31.2	30.5	30.8	28.0	28.6	30.3
Industry not specified	27.0	52.9	36.7	46.5	30.4	25.7
<b>TOTAL CLASSIFIABLE LABOUR FORCE</b>	<b>15.5</b>	<b>16.5</b>	<b>15.7</b>	<b>14.3</b>	<b>14.6</b>	<b>15.8</b>
<b>TOTAL LABOUR FORCE</b>	<b>21.4</b>	<b>22.4</b>	<b>21.7</b>	<b>20.5</b>	<b>20.3</b>	<b>21.2</b>
	MALE					
Agriculture, Forestry and Fishing	2.7	4.3	3.1	3.9	3.2	2.9
Mining, Quarrying and Refining	17.9	12.5	12.8	13.8	8.0	10.4
Manufacture	9.3	9.2	11.1	13.4	10.8	11.6
Construction and Installation	24.5	23.1	22.8	20.3	21.4	22.7
Transport, Communications and Public Utilities	10.8	8.9	10.8	10.5	9.0	10.2
Commerce	5.0	6.5	7.9	6.9	6.8	8.9
Public Administration	13.2	12.0	9.5	6.3	8.8	11.1
Other Services	12.9	12.5	8.9	12.0	9.0	11.6
Industry not specified	16.1	51.4	18.4	47.8	21.6	26.1
<b>CLASSIFIABLE MALE LABOUR FORCE</b>	<b>9.2</b>	<b>9.9</b>	<b>8.7</b>	<b>9.0</b>	<b>8.5</b>	<b>9.3</b>
<b>MALE LABOUR FORCE</b>	<b>12.2</b>	<b>13.4</b>	<b>12.0</b>	<b>12.5</b>	<b>11.3</b>	<b>12.1</b>
	FEMALE					
Agriculture, Forestry and Fishing	9.5	13.5	10.9	11.2	11.0	10.2
Mining, Quarrying and Refining	-	20.0	33.3	11.1	20.0	57.1
Manufacture	30.1	33.3	31.3	24.6	28.4	32.1
Construction and Installation	47.8	19.9	35.7	53.9	39.1	21.4
Transport, Communications and Public Utilities	5.6	19.2	17.5	17.1	16.9	12.2
Commerce	12.4	14.5	15.6	13.8	14.4	18.5
Public Administration	19.5	19.9	18.9	10.4	15.7	16.6
Other Services	36.4	35.7	36.1	32.7	35.2	36.5
Industry not specified	40.5	55.9	57.6	45.0	47.4	33.3
<b>CLASSIFIABLE FEMALE LABOUR FORCE</b>	<b>23.9</b>	<b>25.5</b>	<b>25.2</b>	<b>21.2</b>	<b>23.1</b>	<b>24.0</b>
<b>FEMALE LABOUR FORCE</b>	<b>32.3</b>	<b>33.8</b>	<b>33.8</b>	<b>30.3</b>	<b>31.7</b>	<b>31.9</b>

(1) Unemployment Rate =  $\frac{\text{Unemployed}}{\text{Labour Force}} \times 100$

## SUMMARY OF POPULATION MOVEMENTS IN JAMAICA, 1844-1970

Year of census	Census Population	Intercensal increase		Births, deaths and natural increase during intercensal interval		Natural Increase	Migration balance	Rates per 1,000 population		
		No	Annual rate %	Births	Deaths			Birth	Death	Natural Increase
1844	577,433	-	-	-	-	-	-	-	-	-
1861	441,264	63,800	0.92	2,5400	224,400	51,000	+ 12,800	40	32	8
1871	506,154	64,900	1.38	184,800	127,900	56,900	+ 8,000	39	27	12
1881	580,804	74,600	1.38	203,200	139,200	69,000	+ 5,600	38	26	12
1891	639,491	58,700	0.97	224,200	140,700	83,500	- 24,800	36.7	23.1	13.6
1911	831,353	191,900	1.32	581,100	345,300	235,700	- 43,900	39.5	23.5	16.0
1921	858,119	26,700	0.32	320,200	216,400	103,800	- 77,100	37.9	25.6	12.3
1943	1,237,063	378,900	1.67	765,300	412,200	353,200	+ 25,800	33.2	17.9	15.3
1960	1,609,814	372,800	1.56	855,500	287,500	568,000	-195,200	35.3	11.9	23.4
1970	1,848,512	238,700	1.39	676,500	141,300	535,200	-296,500	39.1	8.2	30.9

GROWTH OF THE POPULATION

## MOVEMENTS IN PARISH POPULATION - 1960-1970

PARISH	Population		Intercensal Increase	Natural Increase	Internal Migration	External Migration
	1960	1970				
Kingston	123,400	109,800	- 13,600	50,200	- 28,000	- 35,800
St. Andrew	296,000	421,700	+ 125,700	132,200	+ 99,400	- 106,500
St. Thomas	68,700	71,200	+ 2,500	18,200	- 3,200	- 12,500
Portland	64,500	69,300	+ 4,800	16,800	- 4,500	- 7,500
St. Mary	94,200	100,400	+ 6,200	25,500	- 8,500	- 10,800
St. Ann	114,400	122,700	+ 8,300	32,300	- 11,900	- 12,100
Trelawny	56,100	61,900	+ 5,800	16,500	- 4,300	- 6,400
St. James	83,000	103,100	+ 20,100	30,400	+ 1,200	- 11,500
Hanover	53,900	59,400	+ 5,500	16,300	- 5,700	- 5,100
Westmoreland	109,600	115,800	+ 6,200	29,700	- 12,100	- 11,400
St. Elizabeth	116,700	127,800	+ 11,100	32,700	- 13,700	- 7,900
Manchester	111,800	122,900	+ 11,100	35,300	- 6,400	- 17,800
Clarendon	164,000	178,300	+ 14,300	45,100	- 5,900	- 24,800
St. Catherine	153,500	184,200	+ 30,700	49,600	+ 3,600	- 22,500
TOTAL	1,609,800	1,848,500	238,700	530,800	-	- 292,100

(Totals rounded to nearest 100)

INTERNAL MIGRATION AND URBAN GROWTH

## MINIMUM ESTIMATES OF INTERNAL MIGRATION 1960-1970

## MALES

Parish of Residence	Total	Parish of Birth													
		Kingston	St. Andrew	St. Thomas	Portland	St. Mary	St. Ann	Trelawny	St. James	Hanover	Westmoreland	St. Elizabeth	Manchester	Clarendon	St. Catherine
Kingston	7,879	—	457	723	495	702	819	448	354	283	650	706	714	797	711
St. Andrew	43,621	11,462	—	1,583	2,014	3,756	3,681	1,726	1,758	1,057	2,515	3,217	3,232	3,200	4,016
St. Thomas	2,336	709	209	—	465	273	113	62	57	44	127	178	128	243	237
Portland	2,670	687	114	412	—	528	129	53	69	69	53	112	96	124	194
St. Mary	4,390	1,369	282	163	412	—	611	115	93	64	104	152	115	209	701
St. Ann	3,197	974	100	46	90	490	—	235	144	85	120	123	188	298	304
Trelawny	2,777	570	51	23	30	84	591	—	417	167	255	158	266	105	79
St. James	5,458	646	102	52	70	139	233	427	—	1,177	1,513	675	190	137	127
Hanover	1,748	227	19	21	22	45	57	73	431	—	507	95	47	65	38
Westmoreland	2,306	562	36	29	77	44	56	60	399	476	—	356	76	101	74
St. Elizabeth	3,121	946	86	84	52	84	93	97	247	90	504	—	434	228	176
Manchester	4,865	1,367	216	101	125	122	252	288	158	73	192	902	—	804	245
Clarendon	5,963	1,197	197	184	164	236	456	187	192	190	398	542	1,125	—	695
St. Catherine	10,153	2,652	839	327	356	1,118	870	277	314	188	474	612	674	1,452	—
<b>TOTAL</b>	<b>100,914</b>	<b>23,359</b>	<b>2,708</b>	<b>3,646</b>	<b>4,332</b>	<b>7,831</b>	<b>7,961</b>	<b>4,048</b>	<b>4,653</b>	<b>3,953</b>	<b>7,422</b>	<b>7,929</b>	<b>7,285</b>	<b>7,764</b>	<b>7,791</b>
Migration Balance		-15,480	+40,913	-1,012	-1,661	-3,441	-4,754	-1,271	+ 835	- 2,335	-5,116	-4,808	-2,420	-1,801	+2,362

INTERNAL MIGRATION AND URBAN GROWTH

Note: See footnote to Table 3.5

## MINIMUM ESTIMATES OF INTERNAL MIGRATION 1960-1970

## FEMALES

Parish of Residence	Total	Parish of Birth													
		Kingston	St. Andrew	St. Thomas	Portland	St. Mary	St. Ann	Trelawny	St. James	Hanover	Westmoreland	St. Elizabeth	Manchester	Clarendon	St. Catherine
Kingston	1,490	-	581	996	649	992	1,181	655	575	443	1,334	1,197	999	1,147	998
St. Andrew	61,518	12,280	-	2,527	3,042	5,368	5,602	2,690	2,460	1,793	4,153	5,502	4,968	5,275	5,555
St. Thomas	2,833	713	216	-	600	211	107	62	64	32	94	155	102	197	270
Portland	2,873	729	135	457	-	550	138	46	72	38	82	140	85	152	241
St. Mary	4,601	1,352	294	184	493	-	629	104	107	74	118	161	122	212	721
St. Ann	3,519	972	112	60	105	624	-	273	145	81	114	150	211	321	347
Trelawny	2,557	508	33	25	25	62	562	-	464	121	172	144	234	106	101
St. James	6,058	615	115	53	75	130	233	561	-	1,378	1,641	767	191	150	135
Hanover	1,754	259	22	18	20	22	65	79	451	-	541	95	40	63	48
Westmoreland	2,678	365	52	23	45	40	60	76	436	663	-	445	74	117	79
St. Elizabeth	2,626	824	63	63	46	76	90	62	220	90	481	-	413	219	127
Manchester	5,683	1,307	206	75	124	118	286	387	183	86	246	1,408	-	978	279
Clarendon	6,657	1,171	240	210	147	221	570	197	209	167	436	711	1,423	-	955
St. Catherine	11,401	2,682	890	324	348	1,253	1,146	340	347	179	563	840	758	1,729	-
TOTAL	126,438	24,017	2,979	5,015	5,728	9,669	16,671	5,582	5,733	5,147	9,675	11,725	9,618	10,720	10,159
Migration Balance		-12,537	+58,539	-2,182	-2,855	-5,068	-7,152	-3,025	+325	-3,393	-6,097	-8,899	-3,935	-4,063	+1,242

Note: See footnote to Table 3.5.

INTERNAL MIGRATION AND URBAN GROWTH

## HEALTH PERSONNEL IN THE PUBLIC AND PRIVATE SECTORS: 1973-1974

Type	Total			Employed by Government			Exclusively in Private Practice		
	1973	1974	1975	1973	1974	1975	1973	1974	1975
Doctors ..	530	570	570	410	450	450	120*	120*	120*
Dentists ..	106	107	103	64	65	65	42	42	38
Nurses ..	1,637	2,524	2,774	1,437	2,324	2,524	200	200*	250*
Assistant Nurses ..	696	950	950	666	900	900	30*	50*	50*
Midwives	123	255	384	123	255	384	nil	nil	nil
Health Educators ..	10	10	11	10	10	11	nil	nil	nil
Pharmacists ..	242	305	314	72	131	129	170*	174*	185
Nutritionists ..	11	11	13	11	11	13	nil	nil	nil
Dietitians ..	8	8	11	8	8	11	nil	nil	nil
Medical Technologists ..	77	77	125	77	77	125	nil	nil	nil
Radiographers	55	55	61	55	55	61	nil	nil	nil
Public Health Inspectors ..	83	n.a	466	83	n.a	466	nil	nil	nil
Health Statisticians ..	..	..	7	..	..	2	..	..	5

\*Estimated.

The ratio of Health Personnel to population has been calculated in respect of Doctors, Dentists, Nurses and Assistant Nurses for the years 1973 to 1975 as under:

## RATIO OF HEALTH PERSONNEL TO POPULATION: 1973-1975

Category	Ratio of Population *			Ratios Recommended by P.A.H.O.
	1973	1974	1975	
Doctors .. ..	1:3,756	1:3,553	1:3,538	1: 910
Dentists .. ..	1:18,780	1:18,925	1:19,827	1:2,857
Registered Nurses .. ..	1:1,216	1: 802	1: 743	1: 769
Assistant Nurses .. ..	1:2,560	1:2,132	1:2,168	1: 385

\*Mean population.

## DENTAL SERVICE STATISTICS BY PARISH: 1974-1975

Parish	Attendance		Extractions		Restorations		Cement Fillings		Fluoride Prophylaxis		Non-Fluoride Prophylaxis	
	1974	1975	1974	1975	1974	1975	1974	1975	1974	1975	1974	1975
Corporate Area ..	90,797	108,320	69,522	83,223	20,241	35,463	4,740	3,742	2,770	4,158	176	340
St. Catherine ..	8,918	11,559	10,292	12,336	206	903	..	75	37	66	..	9
Clarendon ..	4,999	7,432	5,126	7,335	..	45	..	7	..	659	..	58
Manchester ..	13,214	11,176	19,716	16,851	2,377	3,858	198	65	1,451	595	..	153
St. Elizabeth ..	5,838	9,229	6,297	9,428	472	929	34	41	106	162	2	1
Westmoreland ..	4,795	4,452	5,633	8,350	1,963	157	..	..	..	..	..	34
Hanover ..	2,051	4,417	2,724	5,905	..	213	..	367	..	..	..	12
St. James ..	11,269	18,464	14,934	21,056	37	1,509	7	433	10	127	27	360
Trelawny ..	2,458	2,610	3,173	3,126	..	19	..	17	..	..	..	10
St. Ann ..	7,832	12,328	9,487	18,771	..	..	..	..	..	..	..	3
St. Mary ..	6,151	13,442	7,146	14,991	203	872	77	1,156	..	..	20	138
Portland and } St. Thomas }	9,603	6,537	7,470	4,022	3,223	4,174	72	16	132	1,227	39	2
Total ..	167,925	210,016	161,520	204,394	27,696	48,153	5,128	5,919	4,506	6,994	264	1,130

## LABOUR FORCE, EMPLOYED AND UNEMPLOYED,

HIGHEST LEVEL OF EDUCATION ATTAINED	1973						1974		
	APRIL			OCTOBER			APRIL		
	Total	Employed	Un- employed	Total	Employed	Un- employed	Total	Employed	Un- employed
	BOTH								
TOTAL	810,700	637,500	173,200	801,200	621,600	179,600	820,000	642,000	178,000
No Formal Education	51,500	46,600	4,900	59,600	52,600	7,000	54,700	49,500	5,200
Primary	671,200	515,200	156,000	648,500	490,200	158,300	652,300	506,200	156,000
Post-Primary	76,600	65,400	11,200	85,200	72,000	13,200	92,200	76,500	15,700
Other	4,900	4,200	700	1,600	1,200	400	3,700	3,200	600
Not Reported	6,500	6,100	400	6,300	5,600	700	7,100	6,600	500
	MALE								
TOTAL	442,800	388,600	54,200	446,800	386,900	59,900	454,100	399,600	54,500
No Formal Education	35,800	34,000	1,800	40,600	37,900	2,700	37,000	34,900	2,100
Primary	364,700	315,800	48,900	358,300	306,200	52,100	358,300	321,000	47,300
Post-Primary	36,000	32,900	3,100	43,300	38,500	4,800	42,800	37,900	4,900
Other	2,400	2,200	200	700	700	-	2,100	2,000	100
Not Reported	3,900	3,700	200	3,900	3,600	300	3,900	3,800	100
	FEMALE								
TOTAL	367,900	248,900	119,000	354,400	234,700	119,700	365,900	242,400	123,500
No Formal Education	15,700	12,600	3,100	19,000	14,700	4,300	17,700	14,600	3,100
Primary	306,500	199,400	107,100	290,200	184,000	106,200	294,000	185,200	108,700
Post-Primary	40,600	32,500	8,100	41,900	33,500	8,400	49,400	36,500	10,800
Other	2,500	2,000	500	900	500	400	1,600	1,200	500
Not Reported	2,600	2,400	200	2,400	2,000	400	3,200	2,800	400

## BY HIGHEST LEVEL OF EDUCATION ATTAINED

1974			1975						HIGHEST LEVEL OF EDUCATION ATTAINED
OCTOBER			APRIL			OCTOBER			
Total	Employed	Un- employed	Total	Employed	Un- employed	Total	Employed	Un- employed	
SEXES									
814,500	648,000	166,500	848,500	676,600	171,900	869,400	685,100	184,300	TOTAL
35,100	32,600	2,600	45,000	41,000	4,000	37,500	33,700	3,800	No Formal Education
670,600	524,500	146,000	669,600	523,200	146,400	696,600	539,300	157,300	Primary
91,800	76,400	15,600	118,600	99,300	19,300	124,800	103,400	21,400	Post-Primary
5,900	4,900	800	6,400	5,000	1,400	4,100	3,100	1,000	Other
11,100	9,600	1,500	8,900	8,100	800	6,400	5,600	800	Not Reported
SEXES									
449,200	393,200	56,000	475,000	421,500	53,500	469,300	412,700	56,600	TOTAL
24,100	23,200	1,000	31,300	30,100	1,200	25,200	23,800	1,400	No Formal Education
372,800	324,100	48,600	374,300	329,800	44,500	378,400	331,300	47,100	Primary
43,100	37,400	5,700	60,700	53,700	7,000	60,100	52,700	7,400	Post-Primary
2,700	2,700		3,100	2,600	500	2,100	1,700	400	Other
6,500	5,800	700	5,600	5,300	300	3,500	3,200	300	Not Reported
SEXES									
365,300	254,800	110,500	373,500	255,100	118,400	400,100	272,400	127,700	TOTAL
11,000	9,400	1,600	13,700	10,900	2,800	12,300	9,900	2,400	No Formal Education
297,800	200,400	97,400	295,300	193,400	101,900	318,200	208,000	110,200	Primary
48,700	39,000	9,900	57,900	45,600	12,300	64,700	50,700	14,000	Post-Primary
3,200	2,200	800	3,300	2,400	900	2,000	1,400	600	Other
4,600	3,800	800	3,300	2,800	500	2,900	2,400	500	Not Reported

PROJECT LAND-LEASE  
STATUS SUMMARY AS AT SEPTEMBER 20, 1976.

Appendix 1-29

	<u>SEPTEMBER</u>		<u>ACCUMULATIVE SINCE APRIL, 1, 1976</u>		<u>TO DATE</u>	<u>REMARKS</u>
<b>LAND INVESTIGATED</b>						
No. of Properties	62		300		1,868	
Gross Acreage	11,593		46,139		576,831	
<b>LAND LEASED</b>						
No. of Properties	8		23		341	
Gross Acreage	1,746		4,000		81,303	
Arable Acreage	1,655		2,786		45,432	
NO. OF TENANTS PLACED	I 161 )		895 )		17,313 )	
	II 47 ) 208		344 ) 1,398*		4,384 ) 22,583* ∅	* Adjusted.
	III - )		159 )		886 )	∅ Subject to progressive breakdown into categories II & III.
<b>LANDS OCCUPIED</b>						
Acres Distributed	312 )		1,477 )		31,074 )	
	88 ) 400		723 ) 2,742		7,200 ) 42,258	
	- )		542 )		3,924 )	
Acres Planted	1,045 )		6,906 )		32,444 )	
	484 ) 1,605		2,611 ) 10,126		7,385 ) 41,147	
	76 )		610 )		1,318 )	
<b>CROPS REAPED</b>						
Tons	1,070		10,955		54,243	
Value	\$116,924		\$1,076,329		\$6,527,087	
<b>CROPS TO BE REAPED</b>						
Acres					17,367	
Tons (Estimate based on current plantings)					120,411	
Value (at maturity)					\$18,061,650	

PROJECT LAND-LEASE

EXTRACTS from "A Sociological Survey of  
Tenant Farmers on Project Land-Lease" by  
Dr. Carl Stone, Senior Lecturer, Department  
of Government, U.W.I. Mona

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Project Land Lease represents a policy response to the pervasive land-hunger and the desire for land to produce food among a large section of the able-bodied rural population.

(Page 4)

The findings presented in this report are of tremendous significance because Project Land-Lease represents an innovative and new departure in agricultural policy in Jamaica in the post-war period. Moreso, than any other agricultural project directed at small farmers, it has significantly raised domestic agricultural production generally and in particular production for the market through the A.M.C. More importantly, however, it represents a new strategy in small farmer organization that offers a model for adoption throughout all areas of agricultural production as well as other areas of small business.

(Page2)

The implications of the project go beyond small farmers' production and even agriculture. To the extent that it involves a model of organizing production on terms in which the labour of the participants is joined in close partnership with government financing, management planning, credit control, and technical expertise on an efficiently planned and highly organized basis, it is suggestive of a strategy for the re-organization of small business production in all areas of commodity production.

Land Lease I unlike Land-Lease II and III is based on a strategy of short-term five year leases to facilitate maximum acceleration of productive land use by small farmers and the production of short-term crops as well as maximum distribution of land through the allocation of small plots generally not exceeding five acres. It is therefore a short-term phase of the overall project intended to provide the stage before transition to the more permanent phases 2 and 3.

(Page 3)

One important issue that arises in the selection of participants in any small farmer scheme is the need to ensure that those selected represent genuine farmers who need land and have a minimal experience in farming. This is especially the case in Jamaica as many land distribution schemes have often allocated land to non-farmer speculators and the more well-to-do members of the farming community who are able to exercise more social and political influence than the more needy and land hungry rural poor. The survey data reveals that Project Land-Lease has been able to overcome this selection problem by applying careful and objective selection procedures.

(Pages 5-6)

The average acreage (owned by PLL tenants) is 2.4 acres, which is similar to that among small farmers for the island as a whole.

(Page 8)

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"A SOCIOLOGICAL SURVEY"

The survey data reveals that 93.8% of the tenant farmers are full-time farmers whose main livelihood derives from working the land. (Page 9)

In addition to an average of 4 children per family, the tenant farmers are responsible on average for 1.5 adult dependents each which means that these farmers support fully or partially 5.5 persons per tenant farmer.

(Note: This means that some 55,000 adults and children are receiving direct or indirect benefit from Project Land-Lease in less than 18 months). (Page 11)

Twenty-four percent of the farmers were completely illiterate and had no formal education, while the remaining 38 percent were generally semi-illiterate having had only modest exposure to formal education at the primary level. (Pages 13-14)

Although most of the children are very young, the tenant farmers reported that in approximately 25 per cent of their households there were older juveniles who had a primary interest in themselves becoming small farmers. This represents almost 70 percent of the households with juveniles older than 15 years. This suggests that these tenant farmers represent the typical households from which the future of small farming is likely to depend to stem the flow of rural to urban migration. (Pages 14-15)

..... 57 percent of the tenant farmers owned their own houses, 25 percent of them were month to month tenants and another 12 percent lived on family premises. (Page 15)

..... a significantly large number of Land-Lease tenant farmers are members of important local branch organizations such as the J.A.S. and Political Party groupings, as well as being regular Church attenders. Membership in the J.A.S. was reported at a relatively high 48 percent of the tenant farmers which compares favourably with the 28 percent level reported in a recent study of small farmers in the highly organised North Clarendon small farming area. Fifty-nine percent report membership in a local party organization which is almost 40 percent higher than the level reported in earlier surveys of rural communities. (Page 15)

The age distribution of the Land-Lease tenant farmers reflect a younger profile than that characterising the Jamaican small farming community as a whole. The age distribution shows that approximately one-third of the farmers are less than 40 years old and as much as 61 percent are less than 50 years old. For purposes of comparison the age distribution of small farmers in Northern Clarendon is set out in this table. It will be noted that the age structure of Land-Lease tenant farmers is significantly younger.

	<u>% of all Land Lease Farmers</u>	<u>% of all Northern Clarendon Small Farmers</u>
More than 50 years old	37	55
Less than 40 years old	35	20

(as disclosed by recent survey).

(Pages 15 and 16)

"A SOCIOLOGICAL SURVEY"

Project Land-Lease attempted to incorporate both sexes into the scheme. The sample contains 16 percent female tenant farmers and 84 percent male farmers.

(Page 16)

..... the most frequently articulated complaint about the scheme was the shortage of cash to meet some land preparation expenditures not financed by Land-Lease and to hire labour.

(Page 18)

The second most frequently voiced complaint concerned the absence of basic infra-structure such as water supplies, adequate drainage and internal roadways on the farms.

(Page 20)

The third most frequently mentioned complaint concerns the inadequacy of the land allotted to the farmers. When asked specifically about the adequacy of land provided, 74 percent of the tenant farmers indicated a desire for a larger allotment.

(Page 20)

Not only are the allotments very small as can be seen from Table 10, but many farmers complain that significant portions of land distributed are not arable which further limits the income yield and productivity from the individual's efforts. Some thought needs to be given to establishing a minimum size allotment even within the framework of Land-Lease 1, as the majority of the present allocations are insufficient to provide adequately for the income subsistence needs of the tenant farmers and their mainly large families.

(Pages 20-21)

Other complaints occurring with significant frequency are the prices paid for crops by the A.M.C., the absence of buildings and sheds on the farm, the onerous character of the credit terms of repayment and administrative problems such as delays in supplying weed killers, planting materials and fertilizers, inadequate protection from praedial larceny and delays in compensating farmers for damaged crops.

(Page 21)

More incentives need to be provided for productivity by subsidising the more efficient farmers. Farmers who exceed a certain tonnage yield per acre (taking into account the quality and topography of the land and the crops grown on the various farms) should have their fertilizer and plant material costs subsidised by the Government to the extent of a 40 or 50 percent reduction in the prices of these factors of production.

(Page 23)

There is a critical need for temporary sheds and other such buildings on the farm to provide a meeting place for farmers, protection and shelter from the weather and storage for crops reaped for marketing.

(Page 23)

"A SOCIOLOGICAL SURVEY"

The almost missionary zeal and dedication with which many of these officers performed and the extraordinary close relationships and empathy between most of the officers and the tenant farmers, were quite surprising to observe. We had the feeling that these officers both identified with the farming communities they served and felt a managerial responsibility for the success or failure of each project farm. Seventy percent of the tenant farmers, expressed a positive view of the Land Officers who had administrative responsibility on the farms where they had leased.

(Page 24)

In spite of the obvious impact of the Land-Lease project in stimulating domestic agricultural output a significant minority of the tenant farmers have yet to perceive any tangible benefits accruing to them. To some extent those negative attitudes relate to the fact that the rapidly accelerating rate of leasing new areas of land and registering new tenant farmers has often obscured the gestation period required to properly settle farmers and generate profits from growing and reaping crops.

(Page 29)

It seems also that many farmers were not fully aware of the detailed conditions and terms surrounding the lease and many are a little disappointed to find unexpected difficult conditions in many areas especially where the land has been uneven in quality.

Given the rate at which the scheme has accelerated especially in 1974, the organisational problems that must be involved in maintaining such a momentum of growth, the large number of farmers in the sample (and on the list of settled and registered farmers) who have not yet earned any cash incomes from the scheme and the cost of living increases over the last year, the 51% majority of positive evaluations of personal economic improvement from the scheme is actually a good record of achievement.

(Page 30)

Fifty-three percent of the tenant farmers were able to identify specific benefits derived from the Land-Lease project including both material and non-material benefits. Contrary to what most persons would expect, the most frequently cited benefit from Land-Lease is the, sense of dignity and independence that comes from "own-account" farming.

(Page 30)

The dignity and sense of independence that comes from working a piece of land that he controls regardless of whether he actually owns it is a much cherished value that no agricultural planning can ignore without grave risks of failure. Because his style and rhythm of life is tied to the social and psychic values derived from working the land he is able to survive the vagaries of price inflations and commodity shortages better than any other class in the society provided he has access to land and working capital. It is for these reasons that he constitutes the greatest source and political stability in the society.

(Page 31)

"A SOCIOLOGICAL SURVEY"

Next in importance is the cash income generated by Project Land-Lease followed by the subsistence value it provides in feeding the farmers' families and its effect in reducing unemployment and under-employment. Because rural levels of cash income are so low, in spite of concern over the low prices paid by A.M.C., the cash generated through Project Land-Lease has been important in easing the strain caused by the rapidly increasing cost of living. Equally important and in some areas even more important, is the ability of the farmers to feed their big families with the vegetables, pulses, and legumes grown on the Land-Lease farms.

(Page 31)

Sixty-four percent of the tenant farmers expressed the view that the Land-Lease project had solid support from the people in their local communities, although in many cases popular reactions were initially sceptical and suspicious before the scheme got moving. Fifty-eight percent expressed the view that the scheme had important positive effects in the envioning communities around the farms especially in the areas of local food production and supply, employment and easing the pressures from the demand for land. Support for the scheme is by no means unanimous and here we need to look more carefully into the values and aspirations of the small farmers.

(Page 32)

The majority of the farmers have aspirations and ambitions related to agriculture. Significant is the absence of any aspirations to migrate or seek a livelihood outside of farming. Clearly, the Land-Lease tenants represented a group of farmers dedicated to farming as a way of life while desiring a better standard and quality of life for their efforts. Of major importance here is the desire for suitable farm housing.

(Pages 33-34)

Housing is also a major symbol of social status in these rural communities and most small farmers aspire to own modern-looking concrete housing structures. Of those who wanted additional land, 41 percent desired 3 acres and less additional land and another 40 percent wanted between 4 and 5 acres additional land.

(Page 35)

(Note: Land-Lease II and III are designed to satisfy the needs for more land and houses over the course of time.)

As much as 77 percent of the tenant farmers expressed hostility to cooperative farming which was explained to them carefully in the course of the interviews.

"A SOCIOLOGICAL SURVEY"

An important index of the success of the Land-Lease project is the extent to which most of the tenant farmers have come to accept the principle of leasehold as a basis of secure land tenure. While many still hold to freehold as the ideal form of land tenure, as much as 78 percent of the tenant farmers expressed a preference for leasing land on a long-term basis if given a choice between that option and using scarce cash income to purchase land with the possibility of nothing being left for working capital. Clearly, the demonstration effect of Project Land-Lease appears to have softened and weakened some of the biases favouring freehold over leasehold tenure of land among small farmers. It should be noted, however, that the preference is for a longer lease than the five year period provided in Phase I of Land-Lease. Thirty percent wish life time leases, 15 percent prefer leases between 21 and 100 years and 30 percent prefer leases between 10 and 20 years.

(Pages 37-38)

(Note: Land-Lease II and III have 49-year leases).

AGRICULTURAL CREDIT IN JAMAICA

INTRODUCTION:

Credit has been employed as a means of production from the early times of Trade, even prior to the establishment of a proper Banking system.

The word "credit" is derived from the Latin word "Credo", which when translated into English means - "believe", "trust" or "confidence". Therefore for the best possible employment of credit one has to believe in the use of credit as a means of improving production advantageous to the Lender and to the Borrower.

Specifically dealing with agricultural credit in Jamaica, in the early days of the plantation system, the Planters were mainly financed by the Merchants and Produce dealers abroad, particularly in England; In the old colonial days, when Produce Houses were established locally, usually by the agents of Foreign Merchants, the credit scene shifted locally.

The local Merchants in turn appointed sub-agents in the agricultural producing areas where farmers could obtain some form of short term credit on a crop lien basis from year to year. The crops primarily involved then were pimento, coffee, ginger and bananas.

In the earlier days of cane farming in Jamaica, the Sugar Factories themselves gave a certain amount of credit to cane farmers and they being the sole market for farmers' canes, were able to control their invested capital, particularly in the repayment of the loans.

Over the years credit in agricultural production has been stimulated by the following factors:

- (i) Political, social, economic and educational advancement of the people.
- (ii) The necessity for increased production both for local consumption and for earning of foreign exchange.
- (iii) The need for the practicing of better skills and measures to stimulate better agricultural production, particularly in yields.
- (iv) The lack of labour (such as family labour) and increased labour costs.
- (v) The organization of better marketing facilities and the increased demand for agricultural produce.

2. Agencies in Jamaica from which agricultural credit is now available

Jamaica as a new Nation, is truly fortunate to have had years of experience in agricultural credit. Agencies who supply credit to the farmer for agricultural development purposes are:

- (i) The Commercial Banks - who usually finance concerns such as sugar estates and large cane farmers large cattle properties and farmers. They operate mostly on an annual basis, at short term financing at usually high interest rates, depending on the size of the loan.
- (ii) The Credit Unions  
These organizations are fairly well rooted in Jamaica and for many years have assisted farmers in the growth of crops particularly the financing of short term loans such as canes, (St. Thomas). Members of this Union have also been able to obtain loans for the purchase of farm lands and from time to time advertisement in the press have issued the invitation. "Do it the Credit Union way".

The Credit Unions can be built up and can be a force in self-help financing of Agricultural Credit.

Government Agencies

- (i) The Administrator General's Department
- (ii) The Jamaica Development Bank
- (iii) The Agricultural Credit Board.

I shall deal with each in sequence:

The Administrator General's Department - make agricultural loans - usually on a long term basis from funds which they invest on behalf of estates which by virtue of their terms of reference they have to administer. They are more interested in the collection of interest on investment than collection of principal. They do however, at times "call" in their principal when estates are wound up and beneficiaries require settlement.

The Jamaica Development Bank - opened an agricultural "window" in 1970. This Bank was set up by Government and operate mostly on loans provided by the World Bank in its programme of assistance to developing nations.

The Bank provides agricultural development loans mostly for medium and long term financing. Loans are provided for the rearing of Beef Cattle, Dairy production, the establishment and resuscitation of coconuts and for citrus establishment.

The programme..

The programme provides for long term loans to assist existing and new commercial farmers who desire to expand production and includes the preparation of land, farm buildings, crop establishment, purchase of machinery and equipment, planting materials and livestock, and other agricultural inputs.

Technical assistance to farmers with loans from the J.D.B. is supplied by the Officers of the Ministry of Agriculture, the Coconut Industry Board and the Citrus Growers Association.

Loans from J.D.B. may cover up to 80% of the estimated project costs. The minimum of loans is now fixed at \$15,000.00. Interest rate is at  $8\frac{3}{4}$ % per annum at simple interest.

The requirements for obtaining a loan from J.D.B. is that the project must be economically and technically feasible. There must be competent management and the loan must be adequately secured.

The borrower too must be in a position to contribute not less than 20% of the estimated development cost. Repayments are scheduled according to the ability of the project to generate returns.

The following are listed :

	<u>Grace period</u>	<u>Annual Repayment</u>	<u>Total</u>
Coconuts - (pure stand)	6 years	9 years	15 years
Coconuts - (with bananas	4 years	11 years	15 years
Citrus	7 years	8 years	15 "
Beef Cattle	5 years	7 years	12 "
Dairying	3 "	7 "	10 "

Security for loans will normally be taken on -

- (i) Mortgage on land
- (ii) Bill of Sale on livestock, machinery and equipment
- (iii) Personal guarantors
- (iv) Life Insurance Policies.

The J.D.B. also administers the Self-Supporting Farmers' Development Project

This programme is intended to stimulate throughout Jamaica the increased production per unit area of food crops and fruits not now being produced for export and increase the production of livestock, livestock products and related feed crops. Placing idle or under-utilized land into maximum production is a desired factor.

Achieving.....

Achieving these goals will require assistance to a substantial number of farmers to adopt different combinations of farming enterprises that will provide greater returns from land and labour, using modern inputs such as fertilizers, insecticides, new plant varieties, improved livestock and generally improving farm management practices. Access to good and dependable markets is also essential in the effort of increasing profitable production.

Interest rate is at 4% per annum. The funds are provided jointly by the Inter-American Development Bank and the Government of Jamaica.

The aims and objectives are to so improve production that farm income on small farms can be raised to a minimum net income at at least \$900.00 per annum.

#### The Agricultural Credit Board

You will observe that I have left this institution of Lending for the last. For many years and at the present it is the largest source of Government sponsored agricultural credit in Jamaica.

The Board make loans out of an Agricultural Credit Revolving Fund which at present amounts to approximately JM\$18.3 at the end of June 1976, which has accumulated over the years from amounts allocated to the Board by Government and interest collected. The rate of interest to P.C. Banks Approved Organizations under the A.C.B. Law varies between 3 and 6% and to Direct Borrowers at 6% or as the Honourable Minister of Agriculture may direct.

The Board was established in 1912 and was then known as the Agricultural Loan Societies Board. It's principal function when established in 1912 was to control and finance the activities of the People's Co-operative Banks, the first of which was established in 1903. It was found necessary to expand the scope of operations, and in 1960 the Law under which it had operated was repealed and replaced by the Agricultural Credit Board Law (Law 70 of 1960) and the institution then became known as the Agricultural Credit Board.

The Board is appointed by the Minister of Agriculture on an annual basis, who also appoints the Chairman. Meetings of the Board are now held on the 1st and third Wednesdays of each month.

#### Functions of the Board

The duty of the Board is to assist in the development and maintenance of the agricultural activities of the Island and to promote the welfare of persons engaged in those activities.

Loans are made:

Loans are made:

- (a) Direct to farmers (including Registered Co-operatives and Registered Companies);
- (b) People's Co-operative Banks;
- (c) To approved Organizations such as
  - (i) The Jamaica Agricultural Society, Cattle Insurance Co-op Society Ltd.;
  - (ii) The Mid-Clarendon Development Co-op Society Ltd.
  - (iii) The Rhymesfield Dairy Development Co-op Society Ltd.
  - (iv) The Citrus Growers Association
  - (v) The Tobacco Industry Control Authority;
  - (vi) The Coffee Industry Board.

Loans are available to farmers for the following:

- (a) All agricultural purposes, such as the establishment of crops;
- (b) family needs of the farmer as the Board may either generally or in any particular case approve;
- (c) rehabilitation in cases of a natural calamity or disaster;
- (d) construction, improvement, maintenance and repairs of farm buildings;
- (e) construction and repairs of farm dwelling houses;
- (f) provision and maintenance of water supplies for domestic purposes;
- (g) the purchase of land where a farmer can expand his farming activities economically and where his present farm has already been fully developed and he desires to expand his farming operations.
- (h) for fishing activities.

In fact loans are made for almost any agricultural purpose.

Administration.....

### Administration

The Board with its Head Office in Kingston carries on lending operations throughout Jamaica. For reasons of better control and supervision of these operations and for the purpose of effecting co-ordination with the other Extension Services of Government and with farmers, four Divisional offices have been set up at Kingston, Highgate, Montego Bay and Mandeville.

There are four Senior Credit Officers and one is stationed at each divisional office. It is expected that the Inspectoral Staff will also be decentralized too on a Divisional basis.

Credit Officers are based on the 13 Land Authorities. The Land Authorities have now ceased the function of making loans directly to farmers up to their limit of \$2,000.00. The function of Credit within the Land Authorities has now been taken over by the A.C.B.

Farmers who require loans can now obtain their Credit needs through the People's Co-operative Banks or directly from the Board. It is the duty of Credit Officers to see that the Credit functions formerly performed by the Land Authorities are disrupted as little as possible.

The accounting work of the Department is centralised at Head Office and the Board has at its disposal the services of a whole-time Senior Legal Officer. There is provision for 2 other Legal Officers.

### Loan Funds:

The Loan Fund currently at the disposal of the Board is the Agricultural Credit Revolving Fund now stands at approximately \$18.3M. This fund is added to from time to time by Interest payment on loans, ( $\frac{1}{3}$  of the Interest collected is paid over to the Accountant General as a Reserve Fund.) Central Government augments the Fund annually by an appropriation from the Budget. The Board also operates the U.S.AID Loan. An amount of \$1,294,206.00 has been loaned to Dairy Farmers. No new loans can be made from this Fund as disbursements ceased in June of 1972.

### Limits of Loans:

The Board is not empowered, except with the prior approval of the Honourable Minister of Agriculture, to make loan to any individual so that the total indebtedness of that person to the Board exceeds at any one time the sum of Twenty Thousand Dollars.

Similarly, Banks are not empowered except with the prior approval in writing of the Board, to make to any one person any loan in excess of \$1,000.00 or one quarter of their Paid-up Share Capital, whichever is the less.

People's Co-operative Banks....

### People's Co-operative Banks

There are at present 115 People's Co-operative Banks throughout the Island. The Banks under their rules are fully autonomous bodies operated by Management Committees elected at the Annual General Meetings. In addition to loans from the Board, the Banks operate their business of Lending from funds raised by their own subscribed share capital, which at the 31st December, 1975, stood at approximately 1 $\frac{1}{4}$  million dollars.

The rate of interest on any loan made under the Agricultural Credit Law shall be such rate as may be fixed by the Board with the approval of the Honourable Minister. The present standardised rate is 6% per annum. P.C. Banks may however can lend their Share Capital at a higher rate of interest. All loan documents are exempt from stamp duty, recording and registration fees.

### The Farmers' Development Programme:

This is the loan Programme now operated by the Board.

(a) The purpose for which loans are likely to be used are broadly as follows:

2 years - 3 years

(i) Short Term Loans e.g. recurrent expenses in connection with the growing of a crop, fertilizers, spraying materials etc.

3 - 7 years.

(ii) Medium Term Loans e.g. establishment costs for crops such as bananas, sugar cane and pineapple; purchase of cattle, purchase of tractors, farm vehicles, Fishing boats, etc.

7 - 15 years

(iii) Long Term Loans e.g. Land purchase, erection of Farm Buildings water supplies, establishment of Long Term Crops such as citrus, coconuts.

Of course repayments are always scheduled on the enterprise to be undertaken and the present state of farm development.

Type of Security.....

Type of Security

The type of security demanded will depend on the purpose of the loan, on the risks involved and on the credit-worthiness of the borrower. Generally speaking, the security to be required should be on the following basis:

- (i) Short Term Loans - Personal security with or without guarantor(s), Crop Liens and/or landed security.
- (ii) Medium Term loans      Personal security with or without guarantor/s, crop liens and/or landed security
- (iii) Long term loans  
(over 7 years)                      Landed security desirable.

There is flexibility in the type of security demanded, and also to provide credit on security other than landed security.

(c) Repayment:

Repayment schedules should always be realistic and relate to the period which will be required before returns from the investment will begin to be available to the borrower. Repayment in a single lump sum is not insisted on but provision made for spreading repayments where necessary over the whole period of production harvesting etc. Intensive credit education of Bank officials is continually necessary to effect proper understanding of the terms under which credit is made to farmers, and also farmer education.

(d) Appointment of Credit Officers:

Banks require technical advice in regard to the soundness of farm plans as well as on the credit needs of farmers for the various types of loans and in regard to the credit-worthiness of applicants. The Board accordingly provides for such expert advice to be available to Banks and to other approved lending agencies, and farmers, by the appointment of Credit Officers. These Officers are responsible for the analysing of loan applications and supervision of loans (to a limited extent dependent on the availability of personnel).

Their duties.....

Their duties require that they work with Banks, other Lending Organizations and with farmers.

Every effort is being made by the A. C. Board to speed up the processing of loans to farmers as there have been complaints in the past of loans being made available too slow and when it is required to fulfil a farming operation.

It is recommended that a massive loan educational campaign should be launched to advise farmers on the wise use of credit, so that loans are planned for in advance to allow for smooth processing.

Farmers must always plan their loan requirements well in advance, contact their Extension Officer with their programme in time and supply all the necessary documents relative to the smooth processing of their loan applications.

There is need in all Lending Institutions for farmers to realize that Interest and Principal repayments must be met on due date, so that the fund from which loans are made can be constantly replenished in order that they themselves and other farmers requiring loans can obtain such loans quickly.

A loan is a loan and not a gift and must be repaid

Loans are investigated by the Credit Officer on the basis of the fundamentals of Sound Credit which are:

- (i) the honesty and ability of the Man
- (ii) his financial position and progress
- (iii) his repayment capacity
- (iv) the purpose of the loan
- (v) the security offered for the loan.

There is tremendous need for Agricultural Credit in Jamaica, to develop our agricultural resources, which in time will further stimulate agricultural industries.

The time has come for owners of agricultural land to bring every acre into gainful production, to enable the nation to be properly fed, and to earn much needed foreign exchange.

We are blessed in Jamaica with all-year-round growth period, fairly good rainfall and other water resources.

New techniques.....

New techniques have been evolved. The services of the Ministry of Agriculture are geared to help the farmer in every possible way to bring his land into production whether it be for the growing of crops or livestock. With sound farming techniques agriculture can be the mainstay of our Island.

Prepared by C. A Long,  
Assistant Manager,  
Agricultural Credit Board.

SELF-SUPPORTING FARMERS' DEVELOPMENT PROGRAMME  
CUMULATIVE SUMMARY OF LOAN OPERATIONS

As At: Month/Year: June 30, 1976

Date: August, 1976

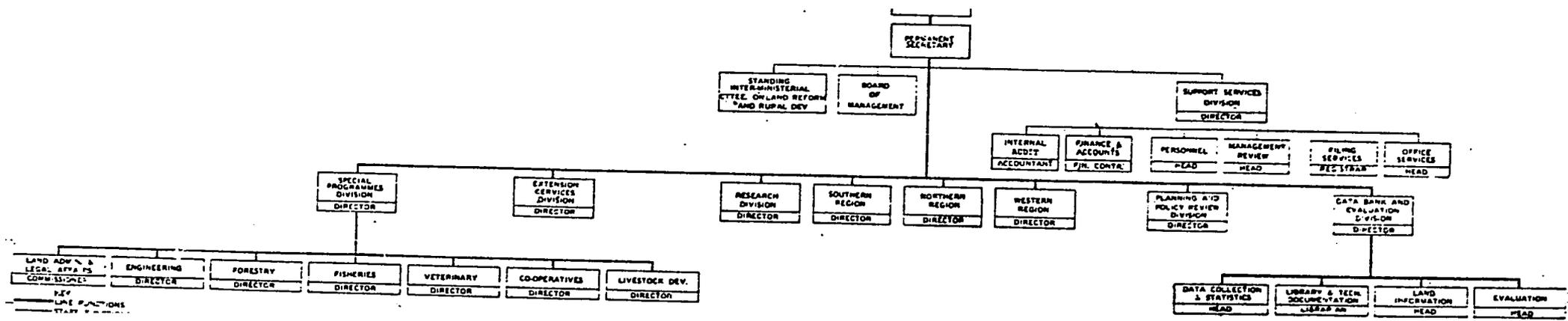
J\$

	IDB Loan Programme # 269	IDB Loan Programme # 317	IDB Loan Programme # 359	Total IDB Loan Programmes	Loans from Recovery	Total all Programmes
. No. of Loans approved (Net)	3,233	692	1,504	5,429	563	3,992
a. Amount Approved (Net)	7,676,335	3,490,959	8,546,698	19,713,992	1,145,331	20,859,323
. No. of Loans cancelled	Not available	92	19	111	9	120
a. Amount cancelled	" "	2,915,953	119,094	3,035,047	9,488	3,044,535
. No. of Loans refused <sup>1/</sup>	" "	Not available	38	38	7	45
a. Amount refused <sup>1/</sup>	" "	" "	251,408	251,408	9,935	261,343
. Amount disbursed	7,676,335	3,490,959	4,645,282	15,812,576	533,658	16,346,234
. Amount disbursed by IDB	5,562,793	2,318,841	1,124,164 <sup>2/</sup>	9,005,798	-	9,005,798
. Balance of IDB Loan to be availed of	Nil	Nil	6,057,654	6,057,654	-	6,057,654
a. Principal Arrears	2,085,508		21,820	2,107,328	297	2,107,625
b. Interest Arrears	390,484		11,954	402,438	1,092	403,530
. Total Arrears	2,475,992		33,774	2,509,766	1,389	2,511,155
a. Principal repayments	2,466,138		70,064	2,536,202	1,231	2,537,433
b. Interest repayments	1,366,632		84,323	1,450,955	4,016	1,454,971
. Total repayments	3,832,770		154,387	3,987,157	5,247	3,992,404
. Loan Outstanding	8,701,156		4,575,218	13,276,374	532,427	13,808,801

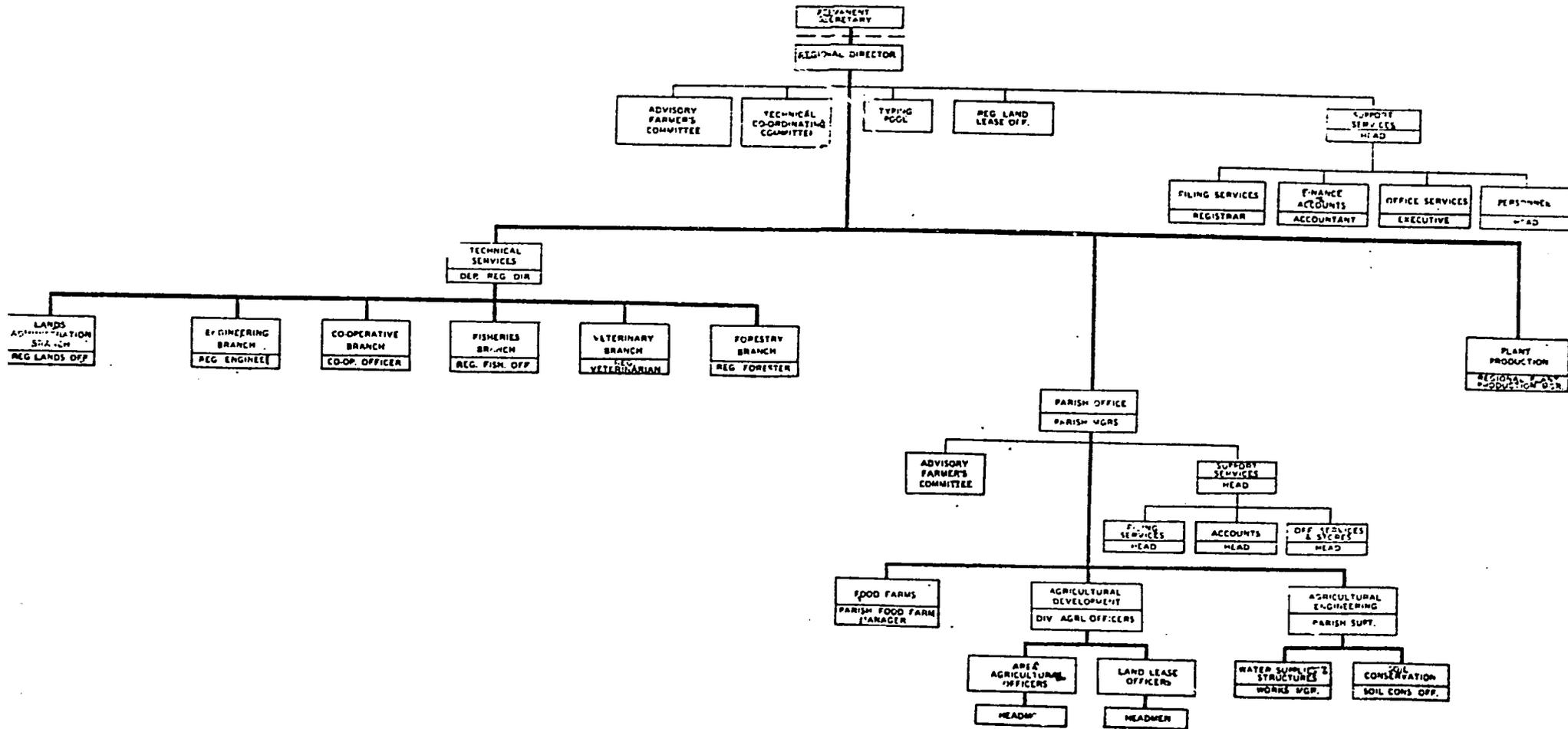
Footnotes: <sup>1/</sup> Since January 1, 1976<sup>2/</sup> As at June 30, US\$1.6 million was pending reimbursement from IDB

/s/ S. E. Smith

MINISTRY OF AGRICULTURE  
PROPOSED ORGANIZATION APRIL 1978



MINISTRY OF AGRICULTURE - REGION  
 PROPOSED ORGANISATION  
 APRIL - 1975



## INCENTIVES I/

Introduction

Between 1955 and 1975, approximately J\$36 million was disbursed in direct subsidies to farmers. These direct subsidies have been designed to promote crop and livestock production as well as to boost the income of small farmers and maintain relatively low consumer prices.

The figure, however, considerably under-estimates the effective level of subsidy to the agricultural sector since it does not include:

- Grants and low-interest loans to Commodity Boards (e.g., a loan of \$9 million to the Banana Board in 1975);
- Losses incurred by A.M.C or A.D.C;
- Interest rate subsidies on loans disbursed by the A.C.B.;
- Animal Feed subsidies;
- Fertilizer subsidies.

This Annex summarises the provisions of the principal subsidy schemes currently available to farmers.

Subsidy Scheme (1975/76)1. Hill Farm Subsidy

This subsidies production by hill-side farmers at a rate of \$10 per acre planted, for a total of 10,000 acres.

(Total subsidy, \$100,000)

2. Food Crop Subsidy

Subsidies are granted at various rates for planting the following priority crops:

<u>Crops</u>	<u>Rate of Subsidy</u>	<u>Total Area</u>	<u>Total Cost</u>
	<u>J\$acre</u>	<u>acres</u>	<u>\$</u>
Onion	70	1,375	96,350
Corn	22	17,700	426,000
Red Peas	40	4,000	160,000
Cow Peas	15	2,500	37,500
Broad Beans	40	500	20,000
Congo Peas	5	1,000	5,000

3. Farm Building Subsidy

This subsidy is being granted to farmers for the erection of farm buildings at a rate of 50 per cent of cost to a maximum of \$300 per farmer. A sum of \$150,000 is being allocated for this.

4. Farm Water Supplies

There are several areas in Jamaica where large water supply schemes are either impractical or too costly because the usual sources, wells, springs, etc., are absent, and the only source is rainfall.

Tank building is the only solution for providing domestic water supply. The subsidy encourages the construction of 1,000 concrete tanks of 10,000 gallon capacity each at \$2,000 each, 50 per cent of the cost to be subsidy and the other 50 per cent given as a 20 year loan to the farm families. Subsidy element amounts to \$1,000,000.

5. Farm Housing

This subsidy is being granted to partially construct 1,000 2-bay houses, and 1,000 3-bay houses. Subsidy allocation to be borne by Ministry of Agriculture amounts to \$500,000.

6. Land Preparation Subsidy

This subsidy is to assist small farmers to a maximum of 10 acres in preparation of land by the Ministry of Agriculture's Farm Machinery Pool. Farmers pay 25 per cent less than current contractual rates. Allocation for this scheme is \$250,000.

7. Special Rehabilitation Scheme

This project is aimed at rehabilitating and bringing back into the main stream of agriculture and society persons in rural areas who over the years have become greatly involved in the growing of illegal crops.

Under this scheme subsidy is being provided for a number of operations, namely: land preparation at 75 per cent of cost to a maximum of \$50 per acre and 10 acres per farm; soil conservation works at 75 per cent subsidy to a maximum of \$100 per acre and \$1,000 per farm; building tanks for farm water supply at a subsidy rate of 50 per cent of cost to a maximum of \$500 per farm; subsidy to the extent of \$50 in kind for crop establishment.

The extent of the subsidy is \$410,000.

8. Agricultural Marketing Corporation

A grant of J\$3,740,000 is included in the 1975/76 estimates

to cover A.M.C. operating deficits, partially resulting from losses anticipated on low-income area sales outlets.

9. Fertilizer Subsidy

This subsidy covers  $33\frac{1}{3}$  per cent of the cost of fertilizer regardless of the acreage of land which the farmer possesses. An allocation of \$3,000,000 has been made for this subsidy for 1975/76.

10. Land Rental by Farmers From Government

The Government under its three phases of Project Land Lease rents land to farmers at ten dollars per acre per annum. This is really a subsidized rental in that the cost to the Government of land leased from private land owners averages more than the ten dollars per acre.

11. Land Taxes Paid by Farmers

Since 1974 the Government has instituted a uniform system of land valuation throughout the island, based on the unimproved value of the land. Agricultural lands, however, qualify for a 75 per cent de-rating meaning that bonafide farmers can apply for a rebate of 75 per cent of the tax due according to the value of the land. Various types of capital improvements to farmers may also be deducted from taxable earnings.

12. Irrigation Water Dues

The Government subsidized irrigation water under its various irrigation schemes throughout the country. The level of subsidy varies from 47% of operating cost in the Rio Cobre Scheme to as high as 77% in the Mid-Clarendon Irrigation Authority, and has been increasing progressively each year.